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ABSTRACT

This overview of health and illness among children and youth in the United States is based on national studies conducted between 1963 and 1972. Major sources of data were four on-going surveys of health conducted by the National Center for Health Statistics (DHEW): (1) the health interview survey relies on household interviews for information on acute and chronic illnesses, injuries, disabilities, costs and utilization of health services; (2) the health examination survey gathers health information, medical histories, and demographic and socioeconomic data for sample populations by direct examinations; (3) the health and nutrition examination surveys collect measures of nutritional status by interviews, clinical examinations and biochemical evaluations; (4) the hospital discharge survey consists of a continuous nationwide review of records from a sample of short-stay general and special hospitals to provide information on in-patient hospital utilization. Also reported are findings from three other studies: a ten-state nutrition survey; a study of nutritional status of preschool children in the United States, 1968-1970; and a study of adolescent health in Harlem. Among the results: (1) children and youth had an average of three acute illnesses a year; (2) obtaining dental care continued to be a problem for many children; (3) children from upper income families were hospitalized more often than children from low income families but their stays were shorter; (4) white children made more physician visits than black children, urban children made more than rural children, and children from high income families made more visits than low income families; and (5) substantial numbers of children and youth were poorly nourished. (Author/MF)

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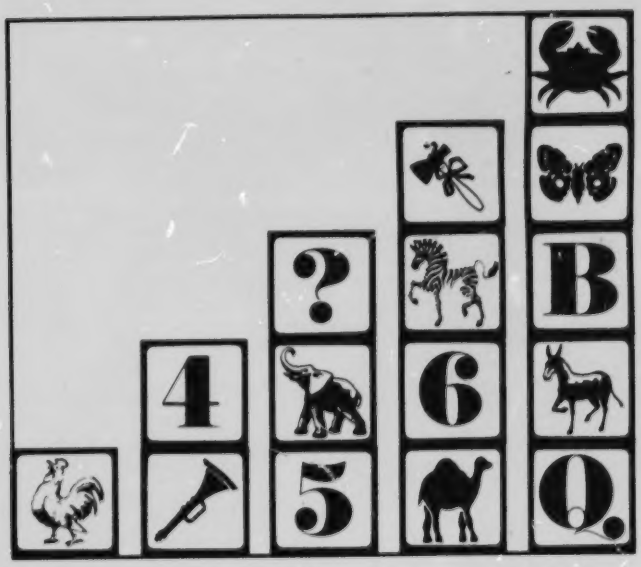
Health Status of Children: a review of surveys 1963-1972



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PREFACE

"Health Status of Children" is intended as an overview of the health status of children and youth in the United States from 1963 to 1972. It also serves as a followup of the 1963 Children's Bureau publication "Illness Among Children," which was based on results of the National Health Surveys of 1957 to 1961.

In the foreword to "Illness Among Children," Katherine Oettinger, then Chief of the Children's Bureau, welcomed the report as a much-needed look at "child health as a whole." She contrasted this approach to the increasing tendency of health-related programs and research to look at health problems of children only in terms of specific diseases and conditions. The 1963 report brought some surprises: in the volume of both acute and chronic illnesses among children, the lack of dental care, the prevalence of allergies, the number of childhood accidents, and the inequities in services for children from low-income, minority, and rural families.

This followup look at "children as a whole" recapitulates many of the findings of more than a decade ago. In both time periods studied, children had an average of three acute illnesses a year, younger children had more illnesses than school-age children, and respiratory ailments accounted for more than half of all acute conditions. Obtaining dental care continued to be a problem for many children, although the recent survey showed some improvement in the ratio of children who had never seen a dentist.

Recent surveys also showed the paucity of preventive care for all children and the disparity of health care for children of minority and low-income families. Substantial numbers of children were found to be poorly nourished. Not surprisingly, children without adequate food intake were more likely to be from low-income families.

I. INTRODUCTION

This review of health and illness among children and youth in the United States is based on national studies conducted between 1963 and 1972. It is designed for use by health workers in program planning, manpower training, and research.

This report also reviews clinical examinations, laboratory tests, measures of growth, biochemical and developmental evaluations, and hospitals and medical records, as well as results of interviews. Major sources of data were four on-going surveys of health conducted by the National Center for Health Statistics, DHEW:

- The Health Interview Survey relies on household interviews for information on acute and chronic illnesses, injuries, disabilities, costs and utilization of health services.

- The Health Examination Survey gathers health information, medical history, demographic and socioeconomic data for the sample populations by direct examinations. One survey cycle related to children, aged 6 to 11 years; another to youths, aged 12 to 17 years.

- The Health and Nutrition Examination Survey collects measures of nutritional status by interviews, clinical examinations and biochemical evaluations. It was initiated in response to a directive from the Secretary of Health, Education, and Welfare to establish a continuing national nutrition surveillance system.

- The Hospital Discharge Survey is a continuous nationwide review of records from a sample of short-stay general and special hospitals to provide information on in-patient hospital utilization.

This overview of child health presents the findings of three other studies:

- The Ten-State Nutrition Survey was initiated in response to a 1967 Congressional directive to the Department of Health, Education, and Welfare to conduct a national survey of malnutrition and related health problems. The Nutrition Program, National Communicable Disease Center, Bureau of Disease Prevention and Environmental Control, was designated as the responsible agency. Ten States, geographically representative of the country, were selected for participation. Survey procedures included physical examinations, anthropometric and biochemical measurements, and dietary assessments. More than 25,000 children 16 years or younger were examined.

- A Study of Nutritional Status of Preschool Children in the United States, 1968-1970 provided an overview of the nutritional status of

preschoolers in the United States and relied on interviews, clinical examinations and laboratory tests. The study was funded by a grant from the Maternal and Child Health Service and conducted by members of the Department of Pediatrics, the Ohio State University College of Medicine and Children's Hospital Research Foundation, Columbus, Ohio, and the Department of Sociology, University of Georgia.

- Adolescent Health in Harlem (1972) was a health study of youths by the Columbia University School of Public Health in collaboration with Harlem Hospital Center, funded by the Maternal and Child Health Service. By personal interviews and medical examinations, the study assessed the physicial and emotional health of Harlem adolescents, their utilization of health services and medical care needs.

Each of the surveys is summarized separately and a final chapter compares the more recent findings to those of 15 or more years ago. The summaries are not exhaustive but highlight information that is of general interest or of special importance from a public health point-of-view.

II. THE HEALTH INTERVIEW SURVEY, 1969-1972

The Health Interview Survey (HIS), initiated in 1957, is the oldest on-going survey program of the National Center for Health Statistics. The survey relies on household interviews for information on personal and demographic characteristics, illnesses, injuries, acute and chronic conditions and disabilities, utilization of health services and other health topics. The design provides for a continuing nationwide probability sample and for interviews with some 42,000 households annually. Findings are published soon after the end of each survey year either in separate topical reports or as supplements to the monthly Vital Statistics series.

Illness Among Children. The present summary relies entirely on published reports for 1969 to 1972. To the extent possible, the information relating to children follows the sequence of the earlier monograph. However, the format of questions, the age breakdowns and some of the subject matter change in successive survey cycles, and the current data are not always analogous to those of 10 to 15 years ago.

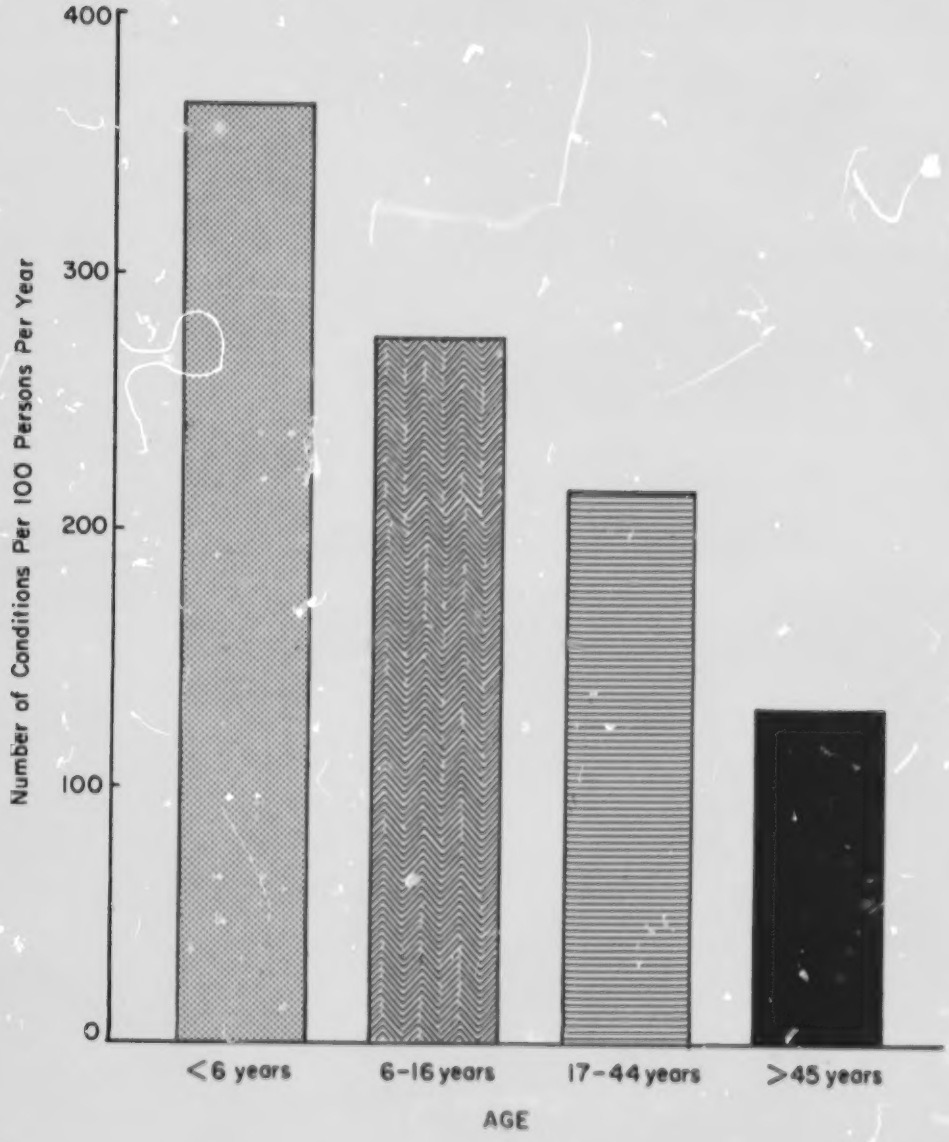
Acute Conditions Among Children. During the period of July 1971 to June 1972 by a series of illness-recall questions, information was obtained on acute and chronic illnesses, injuries, accidents, days of disability, and medical care for these conditions. A condition was considered acute if it lasted less than 3 months and was medically attended or had restricted the usual pattern of activities for 1 day or more. Certain specified conditions such as hay fever, asthma and rheumatic fever were always classified as chronic, even if the episode of illness lasted less than 3 months.

For the year ending June 1972, the HIS reported 202,460,000 acute conditions among children under 17 years, a rate of 307.9 for 100 children or three episodes of illness a year for every child. (Table 1) The incidence of acute conditions was considerably higher among children than adults and higher among younger (0-5 years) than older (6-16 years) children: the rates were 366.1 and 280.4 for the two childhood age groups. (Figure 1) The difference largely reflected the high incidence of respiratory conditions among preschoolers. The total number of acute conditions was about the same for boys and girls.

Respiratory ailments accounted for 57 percent of all acute conditions. (Figure 2) While the percentages for the younger and older children were similar (58% and 57% respectively), the rates were considerably higher for children under 6 than school-age children (214.4 and 159.3 per 100). Younger girls had somewhat lower rates of respiratory conditions than younger boys; among the older children the difference was reversed and also more pronounced. (Table 1)

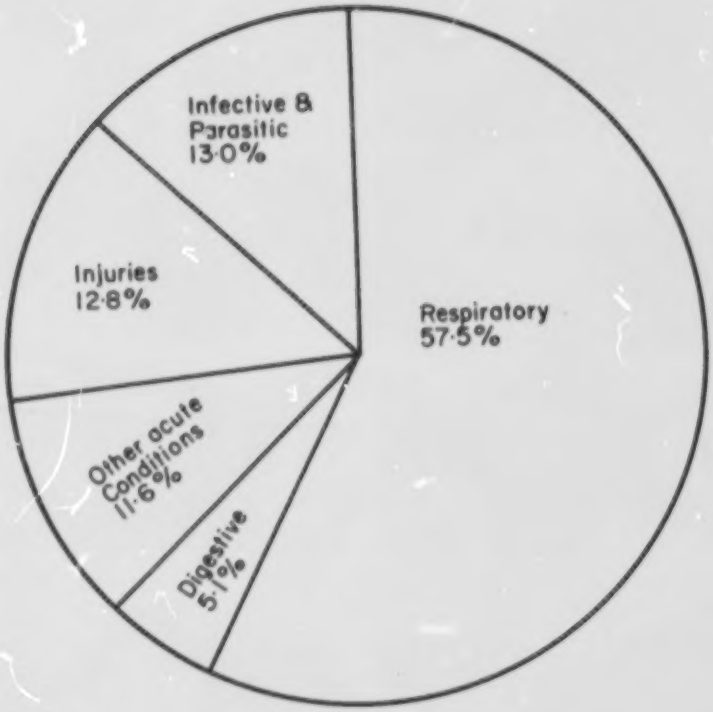
Injuries represented a relatively small proportion, 13 percent, of acute conditions for all children under 17 years. The total number

Fig. II-1. Number of acute conditions per 100 persons per year by age: United States 1971-1972.



Source: Vital and Health Statistics, Series 10 - No. 88, Table 5, page 16.

Fig. II-2. Percent distribution of acute conditions among children under 17 years of age: United States, 1971-1972.



Source: Vital and Health Statistics, Series 10 - No. 88, Table 5, page 16.

of injuries for the year ending in June 1972 was 25,942,000, or almost 40 for every 100 children. All these were injuries that required medical attention or reduced the child's customary activities for at least 1 day. The rate of injuries for 6- to 16-year-old boys was 51.1 per 100, almost double the rate for girls. (Table 1)

Place of residence had a bearing on the number of acute illnesses: more were reported for children in urban than rural areas for both boys and girls, and for both preschool and school-age children. (Table 2)

There were regional differences as well.[1] The South had the lowest and the West the highest incidence of acute conditions, with respective rates of 282.0 and 344.2 for every 100 children. The incidence in the Northeast and North Central regions was intermediary and similar. The same regional patterns pertained to all age-sex groups, with the exception of preschool boys, for whom the rate was lowest in the North Central region. (Table 3)

The 202 million acute conditions among children resulted in 619,813,000 days of restricted activity, or an average of more than 3 days for every condition. A more telling measure of the toll of acute illness was the number of days of restricted activity and confinement to the bed--almost 10 days of restricted activity a year per child, of which 4 four were spent in bed. The number of restricted activity days was considerably higher for the younger (1,131.4 per 100) than for the older children (853.4 per 100). (Table 4, Figure 3)

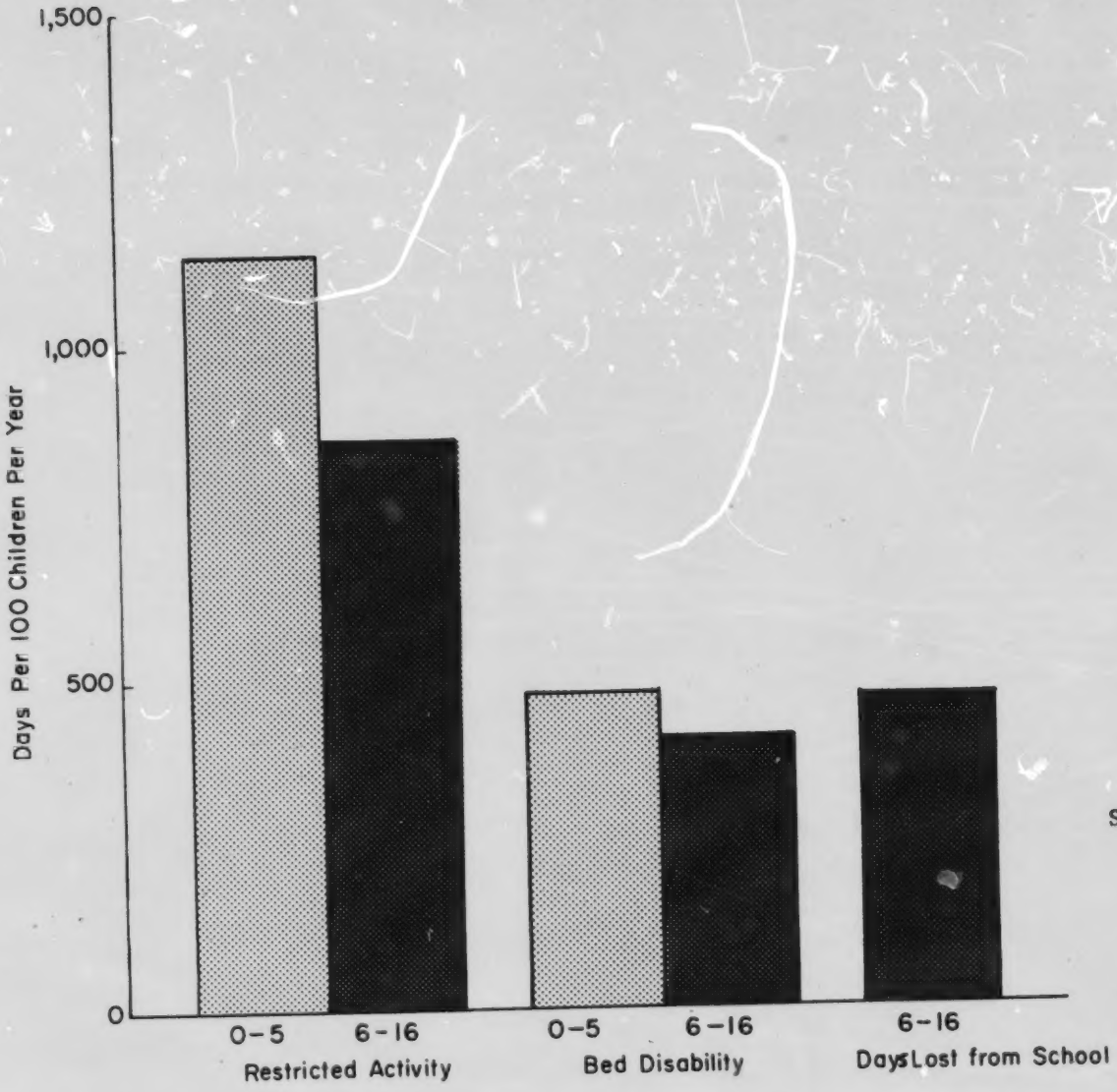
Days lost from school totaled 208,588,000, or nearly 5 days per school-age child. Respiratory conditions were the major reason for missing school. Injuries resulted in almost 16 million days lost from school, two-thirds of those school days were missed by boys. (Table 5)

Chronic Conditions Among Children

Information on chronic conditions and limitation of activity as a measure of long-term disability was culled from the 1969 and 1970 Health Interview Surveys. For children and youth, limitation of activity was classified in one of three ways: a) unable to carry on major activity (0-5 years: ordinary play with other children; 6-16 years: school attendance); b) limited in amount or kind of major activity (0-5 years: amount or kind of play with other children; 6-16 years: special school or special teaching, or unable to go to school fulltime or for long periods); and c) limited but not in major activity (0-5 years: not applicable; 6-16 years: no limitation on school attendance but restrictions on athletics or other extracurricular activities).

1 The Health Interview Survey used U.S. Bureau of Census Regional Boundaries. See Appendix Figure 1, following Table 108 for the States included in each region.

Fig. II-3. Number of disability days and days lost from school associated with acute conditions per 100 children per year by age: United States, 1971-1972.



Source: Vital and Health Statistics, Series 10 - No. 88, Tables 6, 7, and 8, pages 17, 18, and 19.

For 1969 and 1970 there were 1,791,000 children under 17 whose activity was limited by a chronic condition, or nearly 3 percent of the childhood population in that age range. (Table 6, Figure 4) The disabled boys (3%) outnumbered the disabled girls (2%). Children who were unable to carry on their major activity, that is, ordinary play for the preschoolers and school attendance for the older children, numbered 116,000. It should be noted that the Health Interview Survey deals only with the non-institutionalized population and that these numbers do not include children whose disabilities confine them to institutional or residential facilities.

Of those limited by chronic conditions, 332,000 had asthma or hay fever; more than 93,000 were reported to have a heart condition; 88,000 had a hearing impairment; 96,000 were partially or completely paralyzed. Fifty-nine thousand children and youths were reported to have mental or nervous conditions. (Figure 5)

For 1969 and 1970 there was no difference in activity limitation for white and other-than-white children, but the lower the family income, the more likely it was that a child's activities would be limited. The proportion of children from families with annual incomes of less than $3,000 who were limited in their activities was nearly twice that of children from families with incomes of $15,000 or more. (Tables 7 and 8)

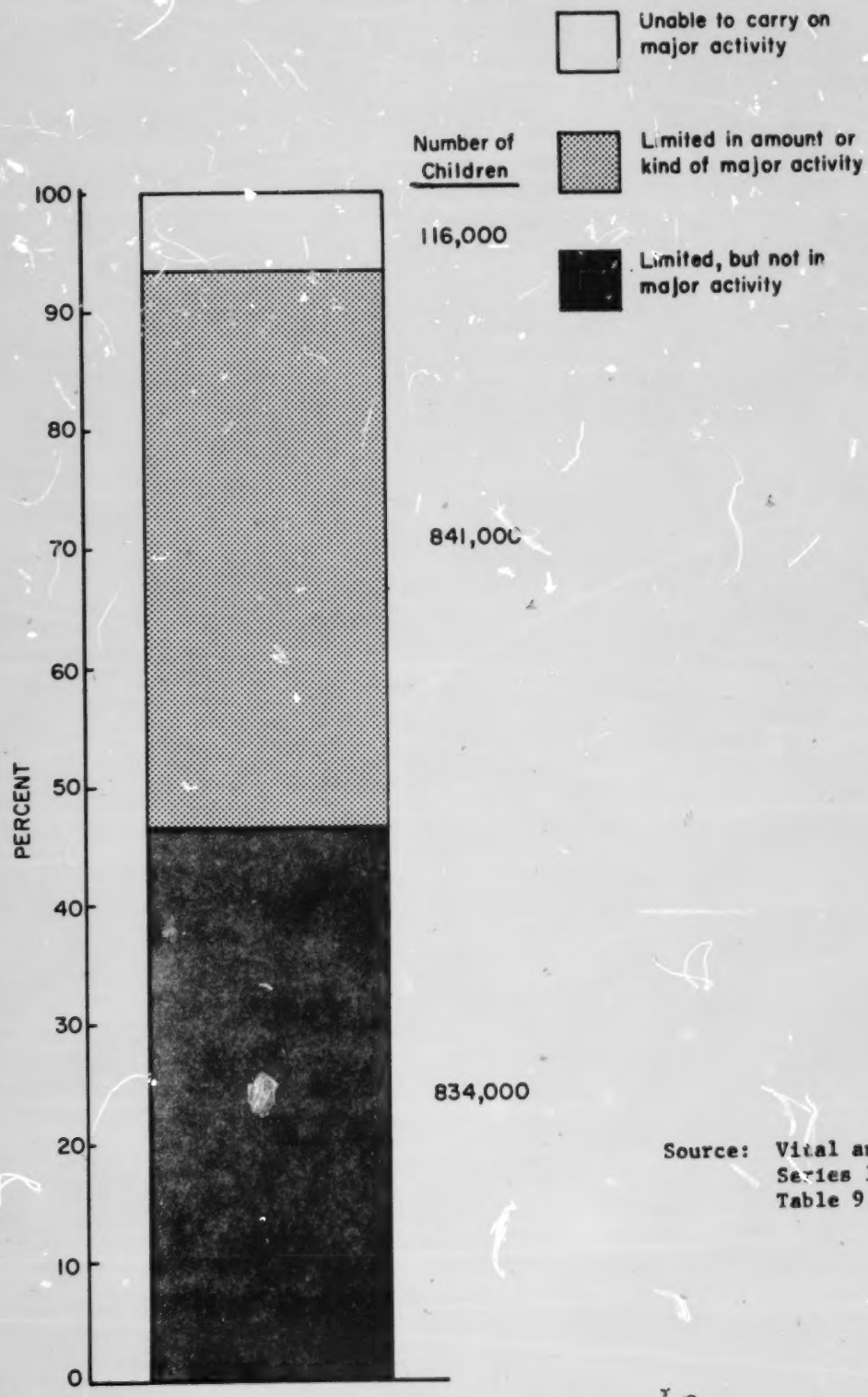
Utilization of Health Services

In 1972, over 250 million physician visits were made by children under 17 years, or more than four visits by every child. (Table 9) A visit was defined as a consultation in person or by telephone for examination, diagnosis, treatment or advice and did not include inpatient hospital visits. In 1969, a year in which the reported number of visits was somewhat lower (3.7), age-related information showed that visits were twice as frequent among preschool than school-age children. (Table 10) The age disparity probably reflected the higher incidence of respiratory conditions and, perhaps, the greater frequency of preventive visits among younger children. However, for all children under 15 years, 75 percent of visits were for diagnosis of treatment.

Information about place of visit was requested during the 1969 survey. Three out of five physician contacts by both preschool and school-age children were office visits. (Table 11, Figure 6) One out of five were contacts by telephone, and these were more frequent on behalf of the younger children. Home visits were rare. Hospital clinics or emergency rooms were the sites of one out of eight visits (12%).

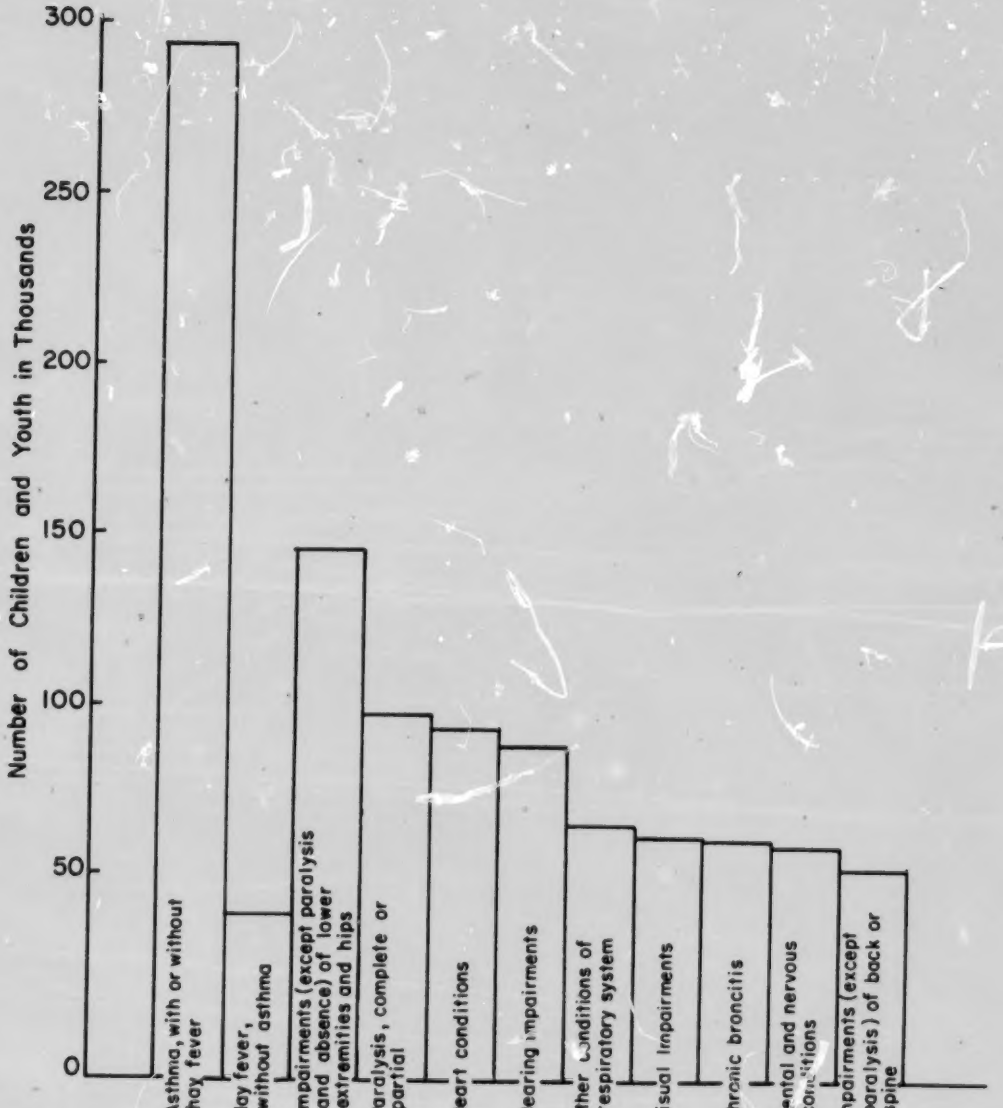
White children of both sexes and both age groups visited a physician more frequently than other-than-white children. For 1969 the respective annual number of visits were 3.9 and 2.5. (Table 12)

Fig. II-4. Number of children under 17 years of age with limitation of activity due to chronic condition and percent distribution by degree of activity limitation: United States, 1969-1970.



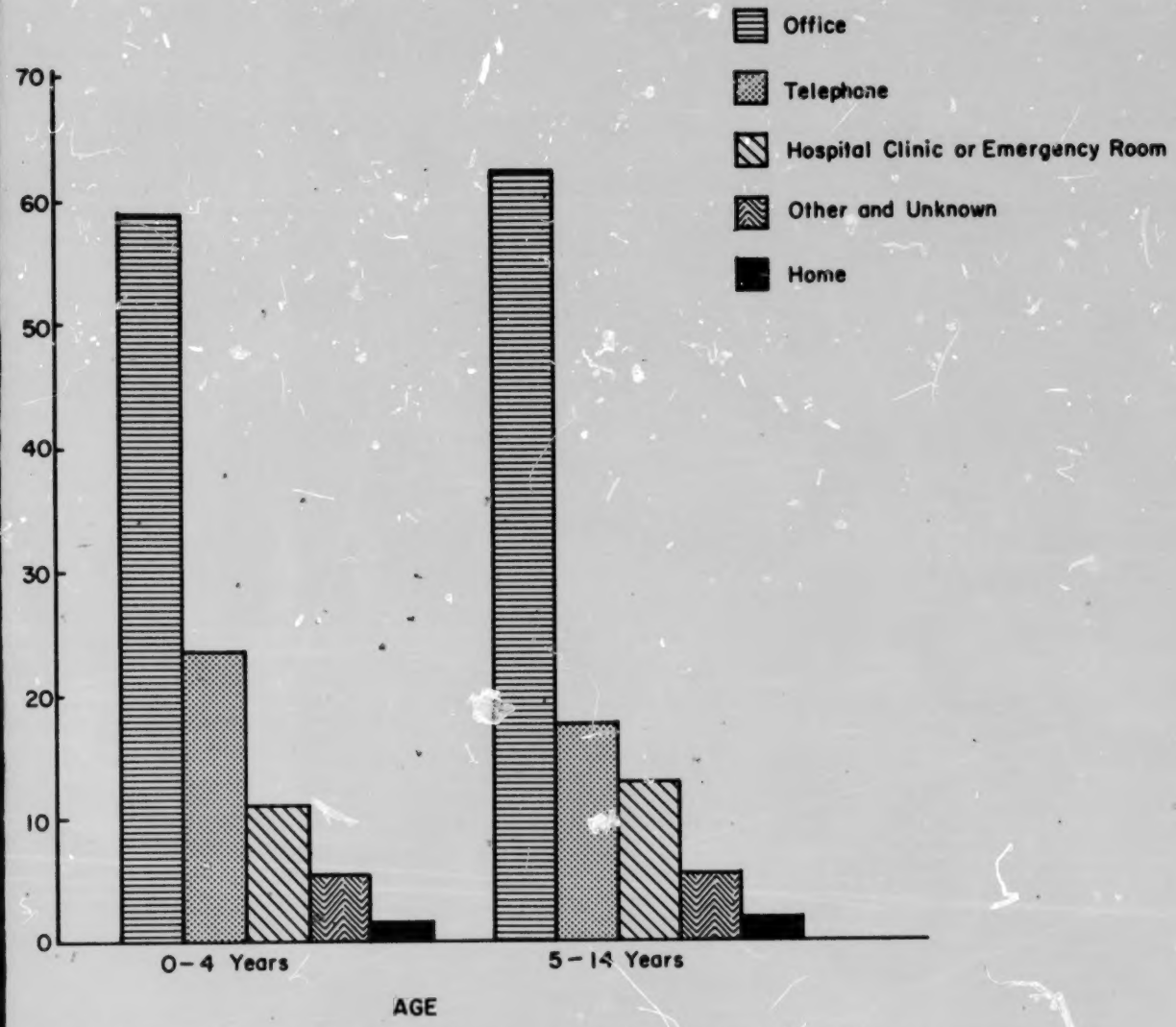
Source: Vital and Health Statistics, Series 10 - No. 80, Table 9, page 25.

Fig. II-5. Prevalence of leading chronic conditions among children and youth under 17 years: United States, 1969-1970.



Source: Unpublished data, NCHS.

Fig. II-6. Percent distribution of physician visits by place of visit and by age of child among children under 15 years of age: United States, 1969.



Source: Vital and Health Statistics, Series 10 - No. 75, Table 14, page 28.

Children living in metropolitan areas visited physicians an average of 3.9 times a year, while children living on a farm averaged only 2.3 times. (Table 13) Children living outside metropolitan areas but not on a farm fell between, with an average of 3.3 visits. This pattern was the same for boys and girls, and for both preschool and school-age children.

There were geographic differences as well. Children living in the North Central region had the lowest frequency of visits (3.3) and children in the Northeast the highest (4.0), followed closely by children of the West and South (3.8 and 3.7, respectively). The same regional pattern held for each sex and age group. (Table 14)

Greater educational attainment was associated with increased use of physician services. (Table 15) Children under 15 years of age, from families in which the head of household had less than 5 years of school, visited a physician only 2.3 times a year. In families where the head of family had 13 or more years of school, the average number of visits was 5.0, or more than double. (Figure 7)

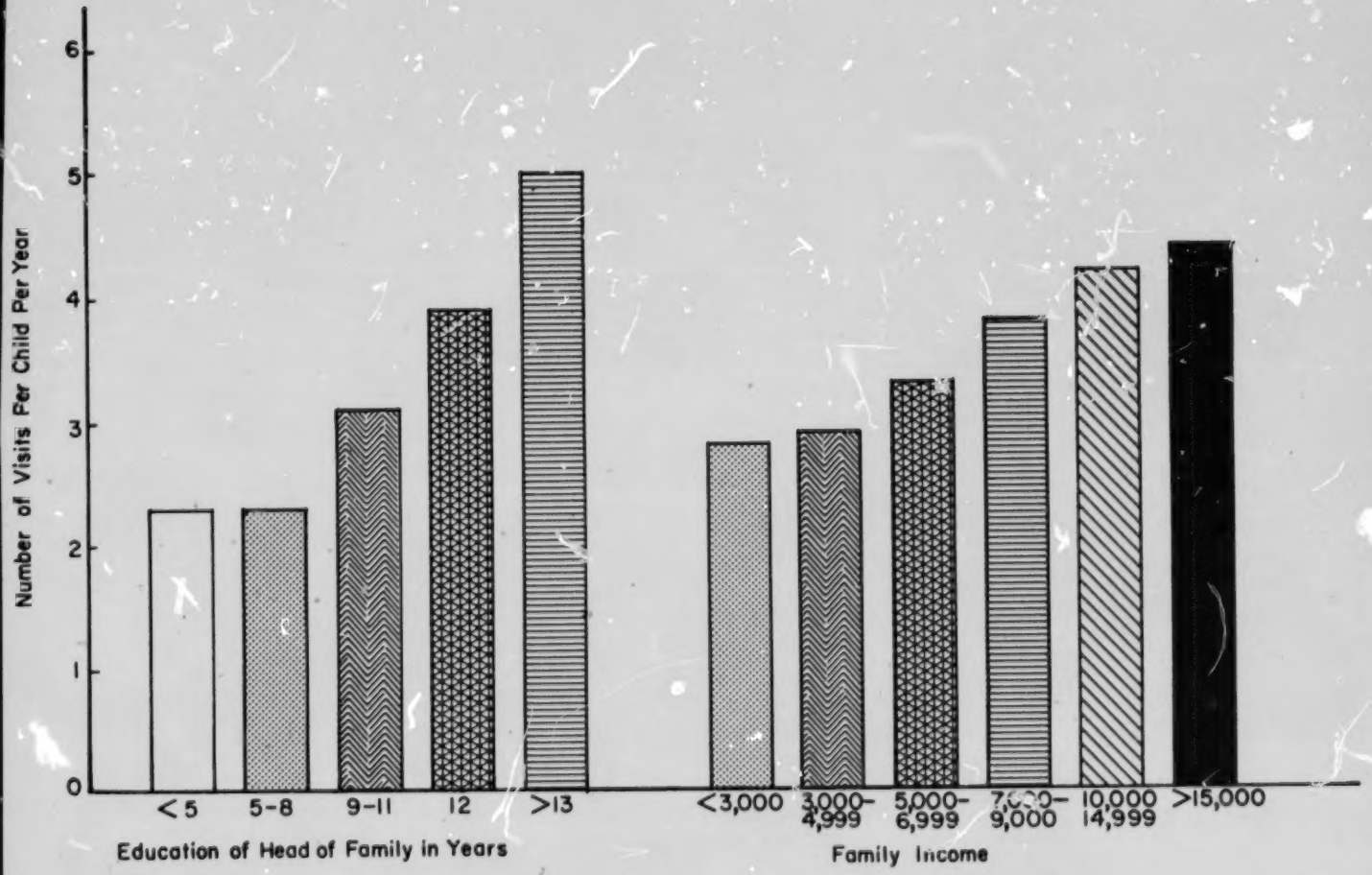
The relationship between educational level and the number of physician visits was especially marked for preschoolers. Among children 4 years or younger, the average number of physician visits ranged from 2.8 for those whose head of family had less than 5 years of school to 7.7 for those whose head of family had 13 or more years of school. For the 5- to 14-year-olds, the corresponding figures were 2.3 and 3.8 (Table 15)

A similar though less marked relationship was noted between physician visits and family income. Children from families with annual incomes of less than $3,000 had an average of 2.8 visits a year in contrast to an average of 4.4 visits by children from families with incomes of $15,000 or more. (Table 16, Figure 7)

When the number of physician visits was examined by education and income, education was the more potent factor. For both income groups - under $5,000 and $5,000 or over - the mean number of physician visits doubled as the education of the family head increased. However, at each of five levels of education there was almost no difference in the mean number of physician visits between the two income groups. (Table 17)

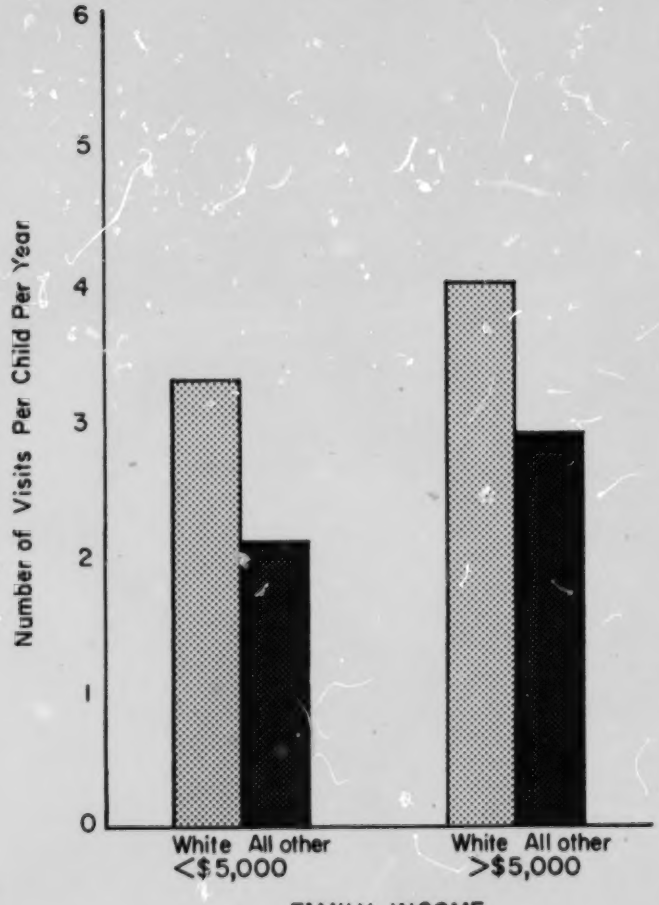
Other-than-white children visited the physician much less frequently than white children--the respective means were 2.5 and 3.9. When the mean number of physician visits was examined for both race and income, white children from the lower income group (less than $5,000/year) visited a physician more frequently than other-than-white children from the higher income group ($5,000 or more/year). (Table 18, Figure 8)

Fig. II-7. Average number of physician visits per year among children under 15 years of age by education of head of family and by family income: United States, 1969.



Source: Vital and Health Statistics, Series 10 - No. 75, Tables 6 and 11, pages 19 and 24.

Fig. II-8. Average number of physician visits per year among children under 15 years of age by race and family income: United States, 1969.



Source: Vital and Health Statistics, Series 10 - No. 75, Table 8, page 21.

Dental Care

The 1969 Survey requested information on the number of dental visits and the time interval since the last dental visit, and related these to selected socio-demographic variables, such as race, family income, place of residence, region, and education of the head of family.

Children under 15 years of age had a total of 80 million dental visits, or an average of 1.4 visits per child in 1969. Few children under 5 years had ever been to a dentist. However, even for the older children, the mean number of dental visits was only 1.8 a year. (Table 19)

White children under 15 years visited the dentist an average of 1.5 times a year, three times as often as other-than-whites. In the 5 to 14 age range, when dental care is especially critical, the mean number of annual visits was 2.0 for white children and 0.8 for other-than-white children.

Predictably, there was a close relationship between family income and the frequency of dental visits--the lower the income, the lower the rate of visits. For 5- to 14-year-olds there was a steady progression in number of dental visits, from 0.8 a year for children in families with incomes under $3,000 to 3.2 a year for children in families with incomes of $15,000 or more. (Table 20, Figure 9)

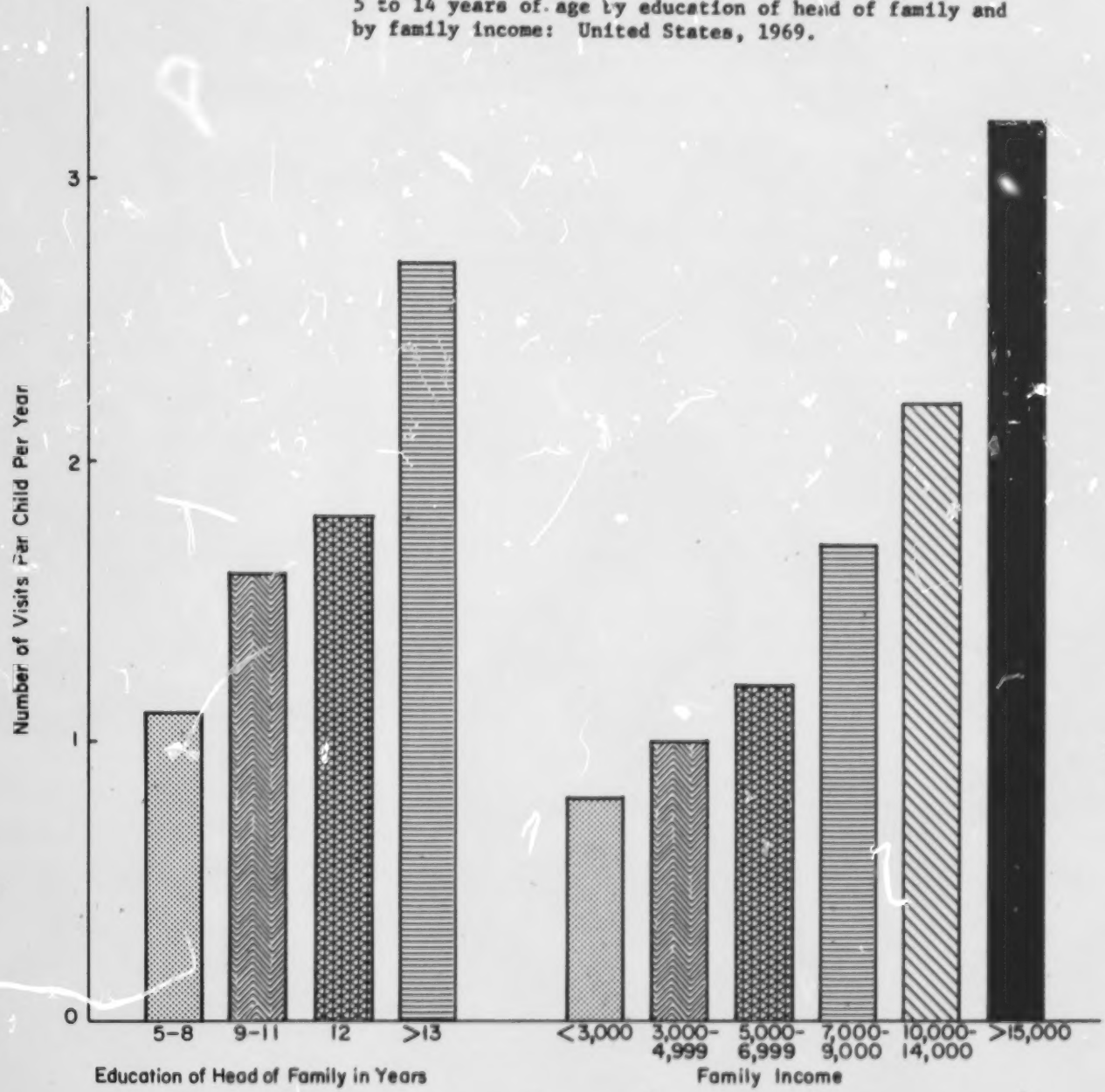
Race proved to be more decisive than income in determining the number of dental visits. School-age white children from families with annual incomes of less than $5,000 averaged more dental visits a year (1.2) than other-than-white children from families with incomes of $5,000 or more (0.9). (Figure 10)

There also was a direct relationship between the educational attainment of the family head and the frequency of dental visits. Five- to 14-year-old children from families where the household head had 13 or more years of schooling visited the dentist an average of 2.7 times per year. The corresponding figure for children in families where the head of household had 5 to 8 years of schooling was 1.1. (Table 21, Figure 9)

Children from urban areas saw a dentist more often than children from rural areas. (Table 22) When regions were compared, children from the South had by far the lowest rate of dental visits, half as many as children from the West and Northeast. (Table 23)

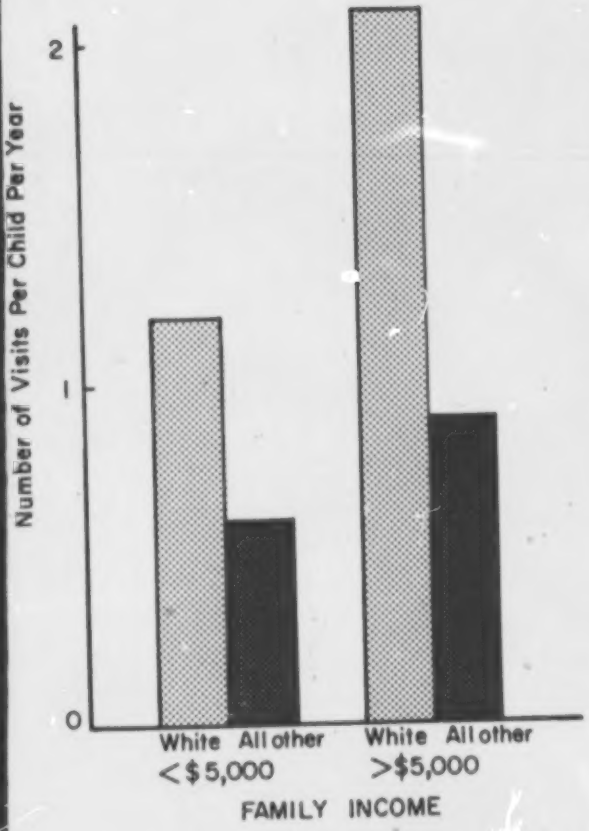
Four out of 10 children (39%) under 15 years had never seen a dentist; among those under 5, almost nine out of 10 (86%) never had; among those between 5 and 14 years, 18 percent had never done so. Fewer than three out of five of the older children had been to a dentist within the past year. (Table 24)

Fig. II-9. Average number of dental visits per year among children 5 to 14 years of age by education of head of family and by family income: United States, 1969.



Source: Vital and Health Statistics, Series 10 - No. 76, Tables 5 and 6, pages 14 and 15.

Fig. II-10. Average number of dental visits per year among children 5 to 14 years of age by race and income: United States, 1969.



Source: Vital and Health Statistics, Series 10 - No. 76, Table 4, page 13.

Out-of-Pocket Health Expenses

During 1971, the Health Interview Survey conducted a study of out-of-pocket health expenses. A self-enumeration questionnaire was mailed to a representative sample of 11,970 households, the same sample used in the last quarter of the 1970 Health Interview Survey. Information was requested on out-of-pocket expenditures in 1970 for hospital, physician, dental, and optical services, prescribed medicine, and other medical expenses for each family member, as well as the total amount of health insurance premiums paid directly by the family during that year. Not included were payments made on behalf of the individual by third-party payors, such as insurance companies or medicaid.

During 1970, total out-of-pocket health expenses on behalf of children under 17 years of age averaged $105 per child, or $75 per child excluding health insurance premiums. An average of $114 were spent for boys and $96 for girls. (Table 25)

Table 26 presents information only for those children for whom out-of-pocket health expenses were made, rather than national averages. The average out-of-pocket amount spent for children was $128 ($138 for boys and $117 for girls). Health insurance premiums accounted for $48 of this amount, with little difference between boys and girls. The largest expense was hospital care, an average of $135 for those children who had been hospitalized. There was a substantial sex difference--$153 for boys compared to $108 for girls. The next largest expense was for physician services which averaged $52 for each child--$57 for boys and $46 for girls. Out-of-pocket dental expenses averaged $50 with little difference between boys and girls.

Eighty-two percent of all families with children incurred out-of-pocket health expenses, including insurance premiums, on behalf of their children. The percentages of children for whom money was spent in each category were: insurance premium 60; physician 53; prescription 44; dental 36; optical 12; and hospital 9. (Table 27).

Summary

The Health Interview Surveys for the period of 1969 to 1972 highlighted important issues for workers in the field of child health--the high incidence of acute conditions, especially respiratory ailments and the toll these take in restricted activity, confinement and missed school; the number of chronic ailments and their limiting effects on children's activities, and the greater prevalence of disabling chronic conditions among children from low income families. Of even greater concern, perhaps, are the many disparities in the care of white and minority children, and of children from economically and educationally advantaged and disadvantaged families; the small number of preventive visits for all children, especially for those who have reached school age, and the general inadequacy of dental care.

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3. DHEW, "Dental Visits, Volume and Interval Since Last Visit," Vital and Health Statistics, Series 10 - Number 76. National Center for Health Statistics, 1972.

4. DHEW, "Limitation of Activity Due to Chronic Conditions," Vital and Health Statistics, Series 10 - Number 80. National Center for Health Statistics, 1973.

5. DHEW, "Current Estimates from the Health Interview Survey," Vital and Health Statistics, Series 10 - Number 85. National Center for Health Statistics, 1973.

6. DHEW, "Acute Conditions, Incidence and Associated Disability," Vital and Health Statistics, Series 10 - Number 88. National Center for Health Statistics, 1974.

7. DHEW, "Personal Out-of-Pocket Health Expenses," Vital and Health Statistics, Series 10 - Number 91. National Center for Health Statistics, 1974.

III. THE HEALTH EXAMINATION SURVEY: PHYSICAL FINDINGS FOR CHILDREN AND YOUTHS, UNITED STATES, 1963-1965; 1966-1970

The Health Examination Surveys authorized under the National Health Survey Act of 1956 are a major program of the National Center for Health Statistics. They provide complete information on the health of the Nation's population by physical and psychological examinations, clinical and laboratory tests and body measurements. Medical history, demographic and socioeconomic data on the sample populations are interrelated with examination findings. To date, three cycles have been completed: the adult population, children aged 6 to 11 years, and youths aged 12 to 17 years. The Health and Nutrition Examination Survey (see Chapter V), covered the population from 1 to 74 years of age and gave special emphasis to unmet health needs and nutritional status.

This and the following chapter present selected findings from the second the third cycles of the Health Examination Survey, developed to obtain basic measures of growth and development for the entire period from childhood through adolescence, or ages 6 to 17 years. In each of these two survey programs examinations were conducted in 40 different locations throughout the United States. Field work for the children's cycle started in July 1963 and was completed in December 1965. Of the 7,417 children in the sample, 7,119 (96%) were examined and are closely representative of the 24 million non-institutionalized children in that age range with respect to age, sex, race, geographic region and population size of place of residence. The youth cycle began in March 1966 and was completed in March 1970. Of the 7,514 youths selected, 6,768 (90%) were examined and are a representative sample of the 22.7 million non-institutionalized youths, 12-17 years of age. The youth survey used the same sampling areas and housing units as the survey of children, and nearly one third of the youths had been examined previously as part of the children's cycle. The time lapse between the two examinations ranged from 28 months to 5 years, with a median of about 4 years.

During a single visit of approximately 3 hours duration, each child or youth was given a standardized examination in especially designed mobile units. The procedures, adapted to the physical and psychological differences of the two age groups, included a physical and dental examination, a psychological evaluation, and a series of laboratory tests and body measurements carried out by trained survey technicians. The demographic and socioeconomic data on household members and the child's or youth's medical history were obtained prior to the examination. Information on health habits, development and behavior were obtained from questionnaires. A birth certificate for each child and youth verified his age and his condition at birth.

This first general survey of the growth and development of American children and youths has resulted in an abundance of findings, some as yet unpublished. The following summary is selective and presented in two parts: 1) the physical findings and 2) the psychological evaluation.

While the information for this and the next chapter is abstracted from two separate, consecutive cycles (children 1963-1965; youths, 1966-1970), each chapter follows a topical rather than a temporal sequence and the results of both cycles are integrated by subject matter.

Parent, Youth and Physician Evaluation of Health Status

Prior to the direct examination of children and youth, parents were asked to complete a medical history form. In the youth cycle, this information was supplemented by a health habits and history form and a health behavior form filled out the youths themselves.

Parents rated the health status of their children and indicated if there was anything about their child's health that was a worry to them.[1] Slightly over half (52%) of the 6- to 11-year-old children were considered by their parents to be in very good health and only 5 percent in fair or poor health, with negligible differences between boys and girls. While there was no consistent trend within the span from 6 to 11 years, two-thirds (67%) of the 12- to 17-year-olds were rated in very good or excellent health and only 4 percent in fair or poor health. Among the youths there was again no age-related trend and only a small sex difference. (Table 28)

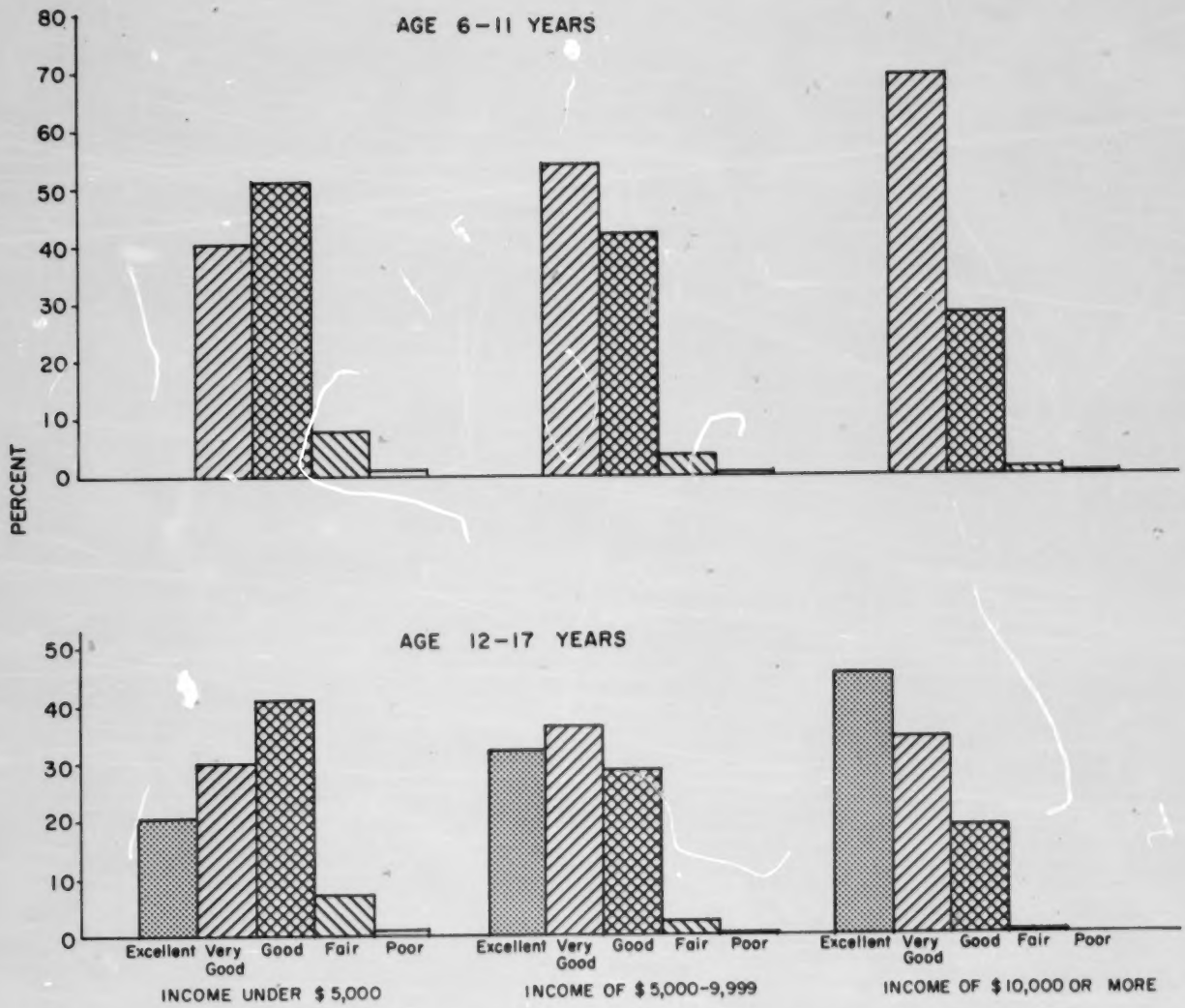
The number of both children and youths whose health was at least very good in the parent's opinion increased significantly with family income. For 6- to 11-year-old children, the percent with a very good health rating went from 40 percent for those in families with annual incomes of less than $5,000 a year to 70 percent in families with incomes of $10,000 or more; for the youths, the percentages with at least very good health ratings were 50 percent for the low income subjects and 80 percent for the high. (Figure 1)

White children and youths were more likely to be considered in good health by their parents than were their black peers; the proportion of those rated in poor health was the same in both racial groups.

Predictably, there was a positive relationship, although not complete agreement, between the parents' ratings and their concern about the child's health--the more frequently worried were those who had rated their children's health as poor or fair. Some aspects of their child's health was a worry to one out of five parents of younger children, and one out of seven of the youths. As for worry about the child's health in relation to

[1] In the children's cycle a four-point scale was used (very good-good-fair-poor) and in the youth cycle a five-point scale (excellent-very good-good-fair-poor).

Fig. III-1. Percent distribution of parents' rating of present health of children and youths by annual family income: United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 129, Table 13, page 49.

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income, race and region, parents who were black, from the South, and from low income groups were the more frequently worried.[1]

When the youths were asked to describe their own health status, 60 percent rated their health very good or excellent, and an additional 36 percent as good. They were less likely than their parents to give themselves an excellent health rating. (Figure 2). Boys more often than girls reported excellent health, and self-appraisals of poor or fair health increased slightly with age--from over 7 percent at 12 years to almost 13 percent at 17. About one out of ten reported having a health problem they would like to discuss with a doctor.

In the direct examination by survey pediatricians, one out of eight among the 6- to 11-year-olds, or an estimated 3.1 million children were found to have some significant abnormality (11% with some cardiovascular, neurological, musculoskeletal or other condition and an additional 2% with acute otitis media). Boys were more likely than girls to show such abnormal findings (14% and 12% respectively).

Among the 12- to 17-year-olds, the pediatricians found more than one out of five (22% or an estimated 4.9 million) to have some illness, deformity or handicap affecting normal growth, development or function. This rate, almost double that found among children, was attributed largely to conditions associated with the onset of puberty (for example, acne and other maturation problems). Boys and older youths were again slightly more likely to have abnormal findings. (Table 28).

Children and youth's who were rated in poor or fair health by their parents, were found significantly more often to have a physical abnormality on examination. However, parents were sometimes worried or gave a poor health rating to children and youths who were healthy on physical examination; and, less often, were unconcerned about children and youths with abnormal findings.

Throughout the entire age span from childhood through adolescence, the proportion rated abnormal on examination was lower among whites than blacks; although, the differences were statistically significant only for 6- to 11-year-olds. Regional variations showed different patterns in the two cycles: fewer abnormal 6- to 11-year-olds were found in the West than in other parts of the country. Among youths, the proportion found abnormal was significantly higher in the South. The proportion of children or youths found to be abnormal decreased steadily with successively higher income levels, but only the difference in rates between the highest and lowest brackets was statistically significant. (Figure 3).

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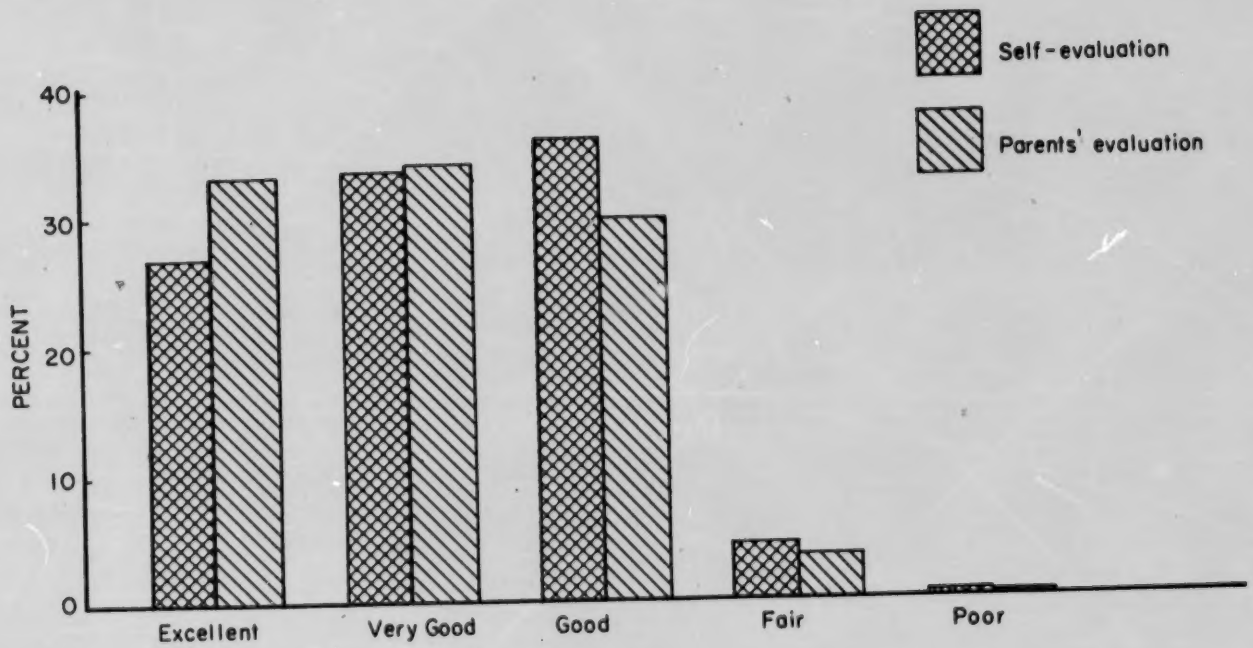
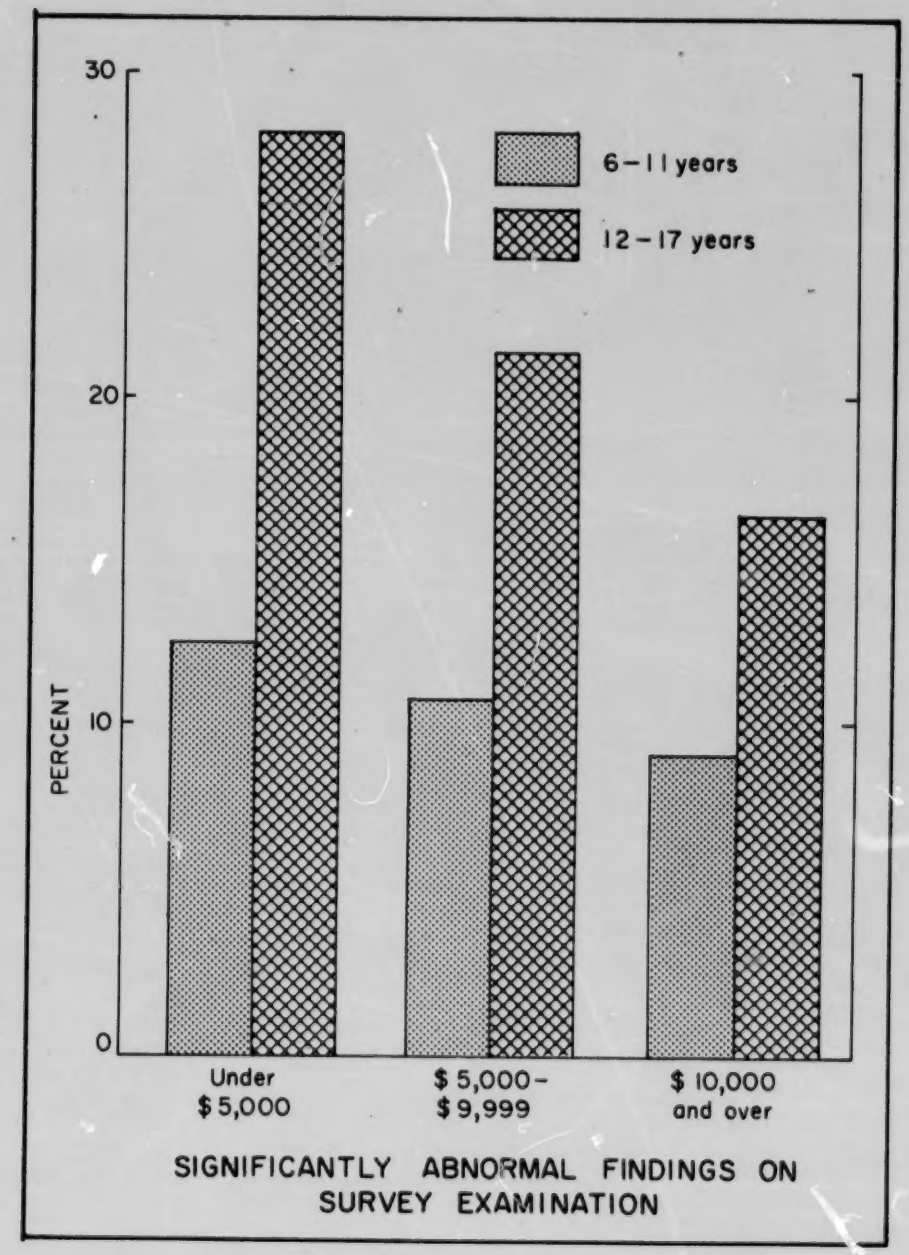
1 See Appendix Figure 1, following Table 108 for the regional boundaries used in the children and youth cycles of the Health Examination Survey.

Fig. III-2. Percent distribution of youths by self-evaluated and parents' evaluated health status: United States, 1966-1970.



Source: Vital and Health Statistics, Series 11 - No. 129, Table 1, page 3, and Series 11 - No. 147, Figure 1, page 3.

Fig. III-3. Percent of children and youths with significantly abnormal findings on survey examination by annual family income: **United States, 1963-1970.**



Source: Vital and Health Statistics, Series 11 - No. 129, Figure 25, page 25.

Medical History

The medical history completed by the parents elicited information on childhood infectious diseases, accidental injuries, allergies and related conditions, chronic illnesses, respiratory and sensory-neurological conditions, hospitalization, surgery and the regular use of medication. (Table 29, Figures 4-7).

Among the most noteworthy findings were:

--the most prevalent childhood infectious disease was measles: the proportion increased from 73% among 6-year-olds to 94% among 17-year-olds;

--chicken pox was nearly as common among the youths (84%); no data were obtained for children;

--the proportion who had had mumps increased from 38% at 6 years to 67% at 17 years;

--whooping cough was reported for 9% of children and 14% of youths;

--the proportion of those who had incurred broken bones increased from 6% for 6- and 7-year-olds to 19% by 15 to 17 years; although fewer children and youths had ever been knocked unconscious, the proportion increased even more sharply than fractures from 2% at 6 years to 12% by 17; boys suffered injuries more often than girls;

--the proportion who had had hay fever increased from less than 4% among 6- to 8-year-olds to over 10% among 16- and 17-year-olds;

--asthmatic conditions were nearly as common among children as youths (5% and 6%) and showed no trend with age, but were more common among boys than girls at all ages;

--4% of the children and 5% of the youths gave a history of kidney trouble; twice as many girls as boys had been afflicted;

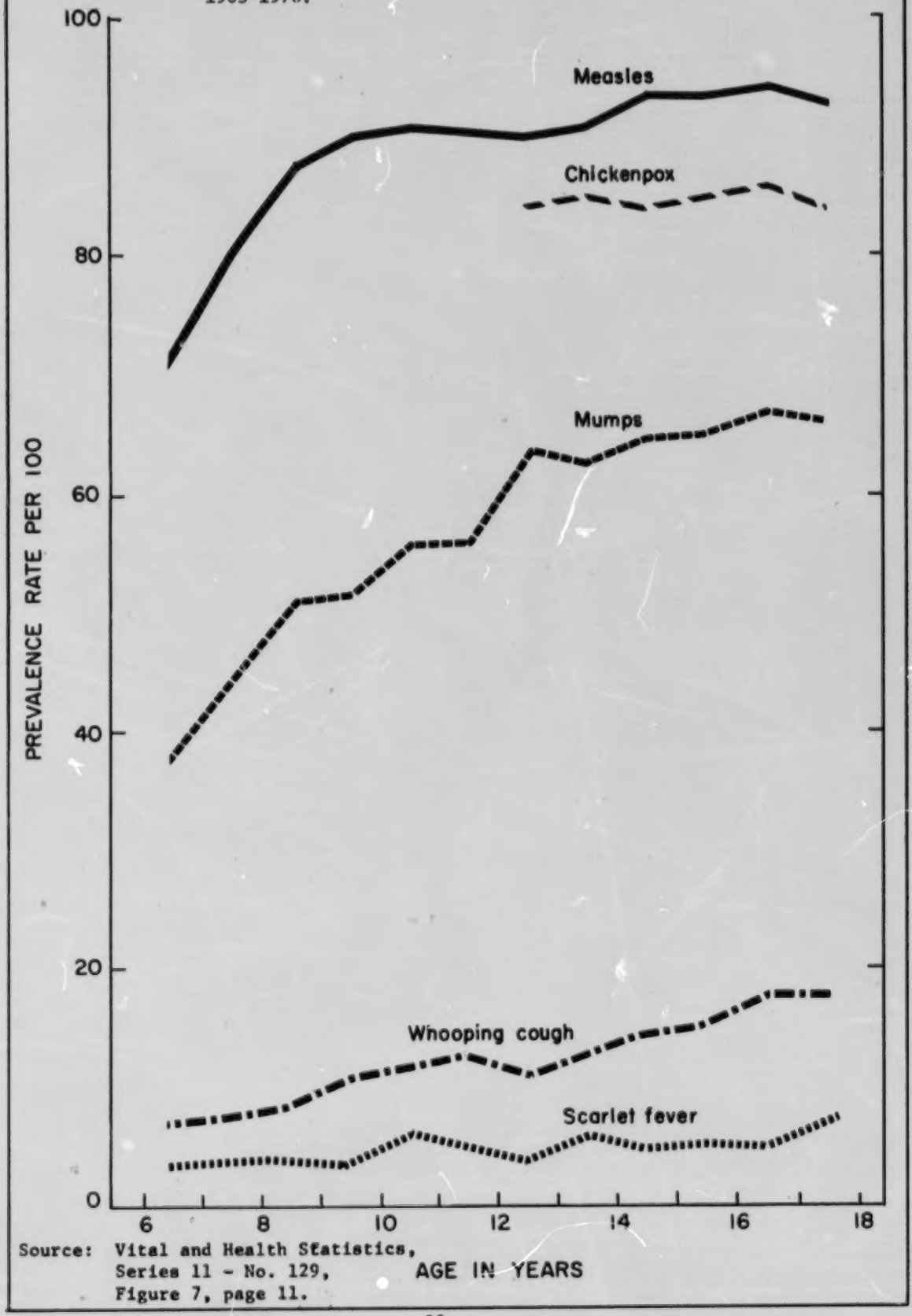
--heart murmurs or other heart conditions were somewhat more frequent for youths than children (5% and 4%);

--among children, 12% had had frequent sore throats, 21% reported more than three colds in the previous year, 11% persistent coughs and 16% bronchitis; the prevalence of an excessive number of colds, persistent coughs and bronchitis decreased with age;

--3% of the children and youths were reported to have had convulsions or fits;

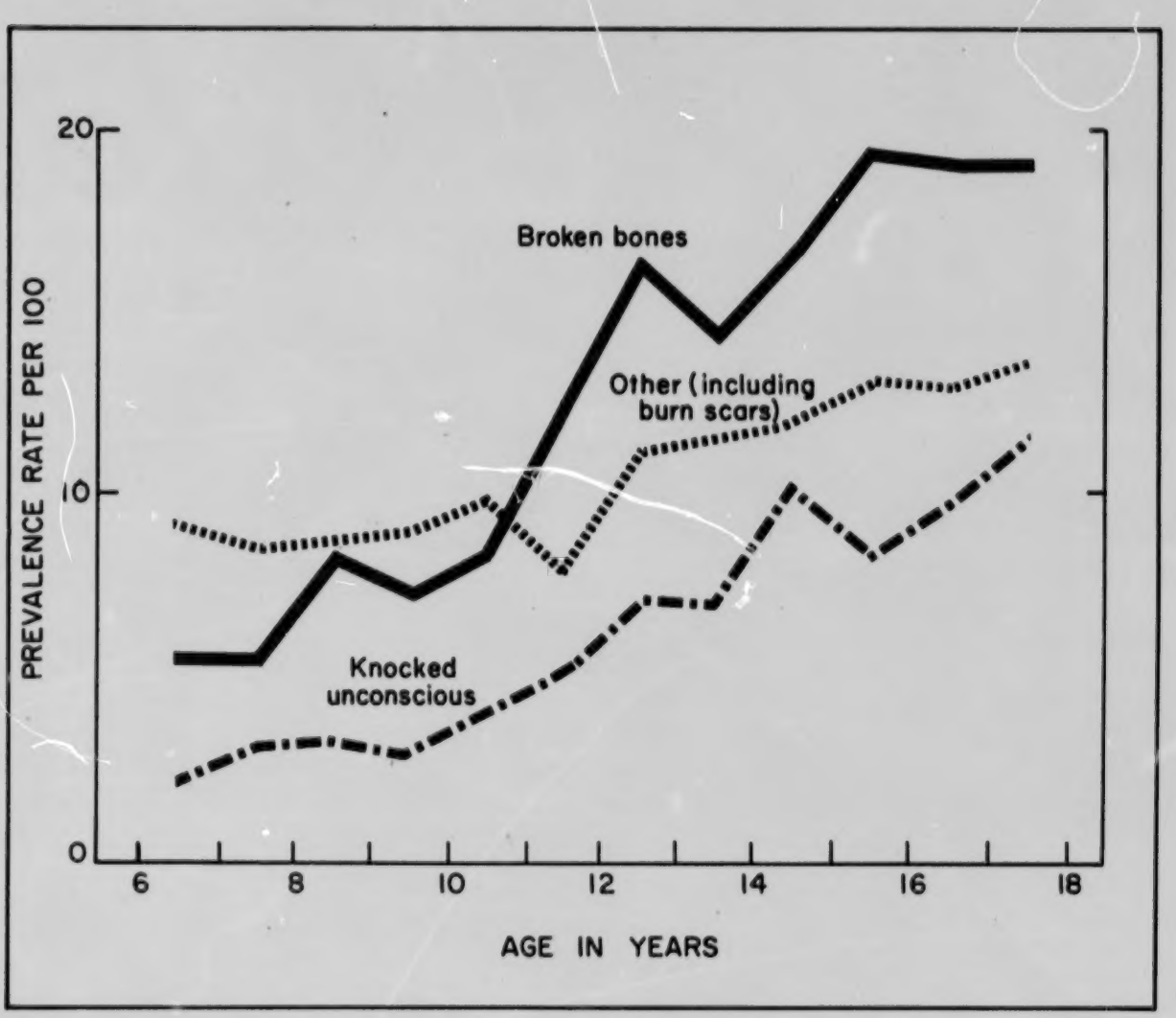
--the proportion of children and youths who had had at least one operation increased with age from 24% at 6 years to 43% at 16 and 17 years; the majority of these operations were tonsillectomies and adenoidectomies;

Fig. III-4. Prevalence rates for history of selected childhood infectious diseases among children and youths by age: United States, 1963-1970.



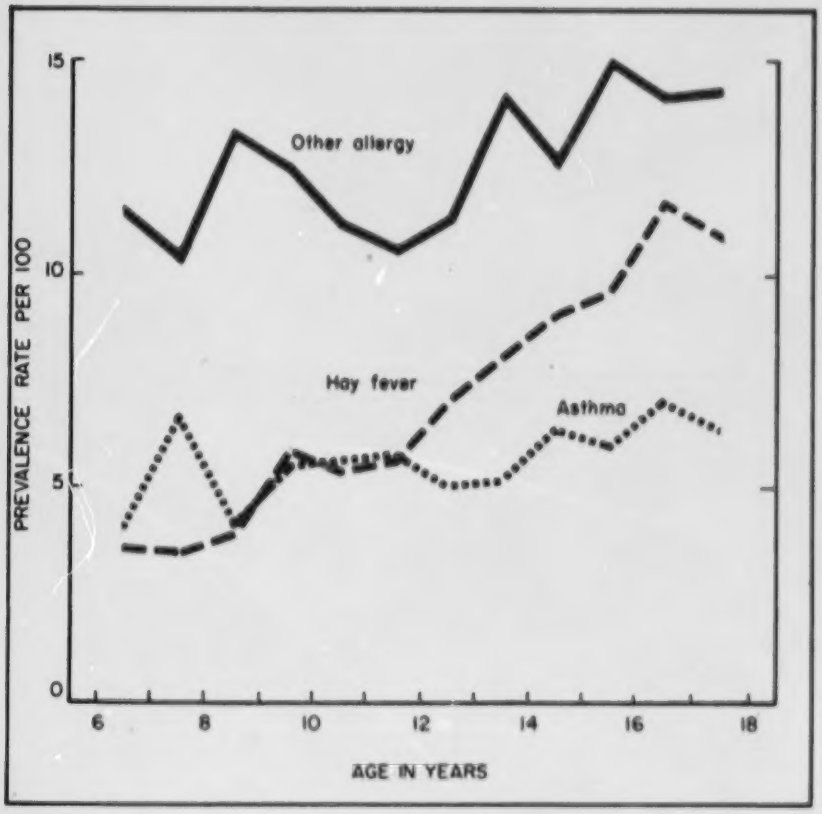
Source: Vital and Health Statistics, Series 11 - No. 129, Figure 7, page 11.

Fig. III-5. Prevalence rates for history of major types of serious accidental injuries among children and youths: United States, 1963-1970.



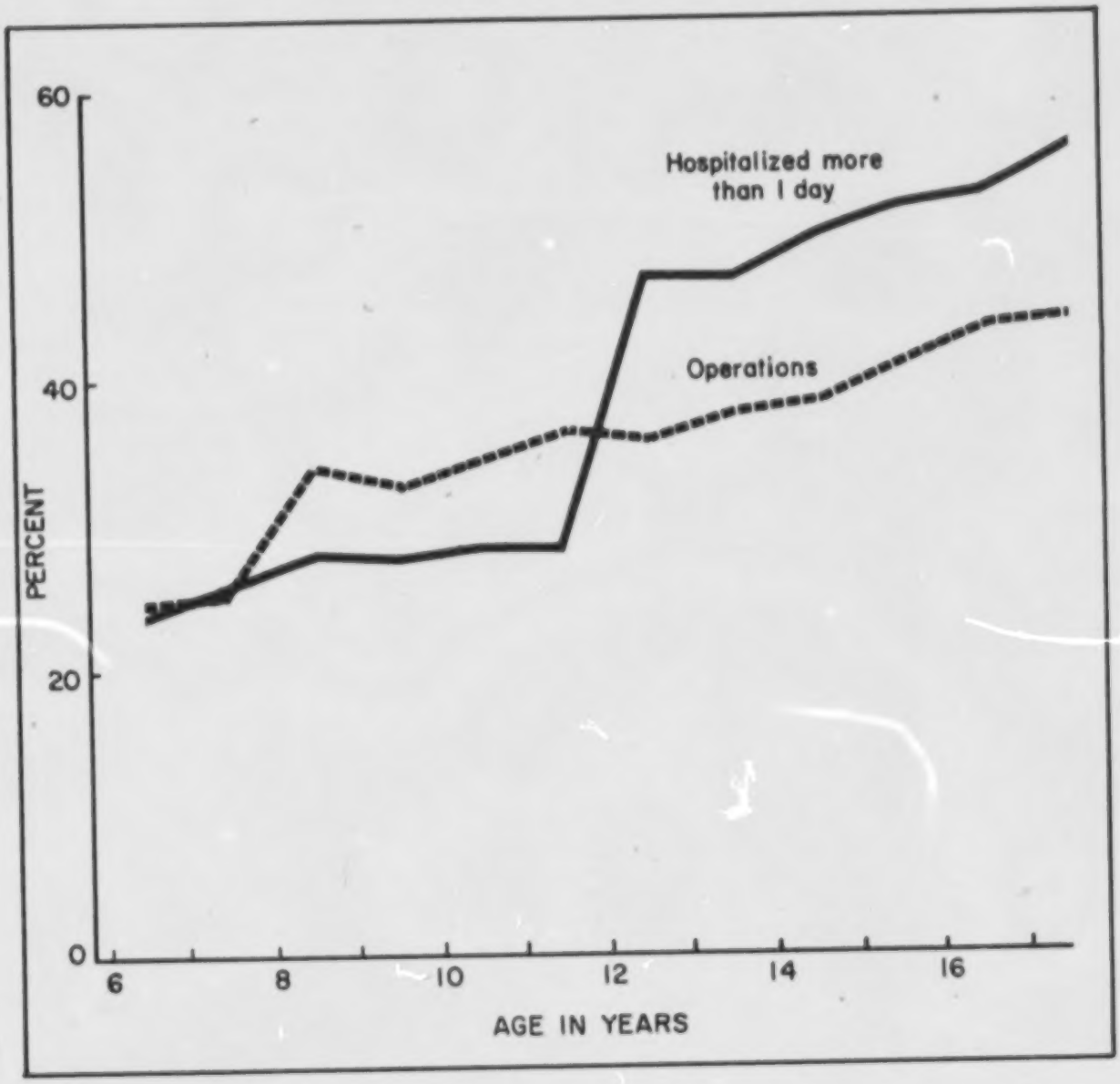
Source: Vital and Health Statistics, Series 11 - No. 129, Figure 8, page 12.

Fig. III-6. Prevalence rates for history of hay fever, asthma, or other allergies among children and youths: United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 129, Figure 9, page 13.

Fig. III-7. Percent of children and youths with a history of operations or hospitalizations by age: United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 129, Figure 13, page 16.

--27% of children had been hospitalized, boys significantly more often than girls; 50% of the youths had been hospitalized over night or longer, again with a significantly greater frequency for boys than girls;

--4% of the children and 6% of the youths were taking medicine regularly, most often under doctor's orders.

Medical and Dental Examination and Body Measurements

From the direct, multi-faceted examination of children and youths, this summary presents the results of the ear, nose and throat examination; the visual acuity tests; the dental examination; and height and weight, and skinfold measurements. The selection of these results was limited to the more objective portions of the examination. The physician's overall evaluation of the child's or youth's health status has been included with and compared to the parents' and youths' own ratings in an earlier section of this chapter.

Not all the results of the two cycles were equally available, which partly accounts for the differences in content and detail of the several sections.

Ear, Nose and Throat Examination

As one aspect of the physical examination, hearing threshold levels were determined for each child and youth. The related ear, nose and throat examination included an evaluation of the condition of the drum, auditory canal and external ear, and an inspection of the oral pharynx, tonsils and nose. Extensive analyses have been completed and published on the children's examinations, but fewer results are available for the youth cycle.

Less than 1 percent of children 6 to 11 years of age had difficulty with understanding speech--0.7 percent, faint speech and 0.1 percent, normal speech. (Table 30) Although the prevalence of hearing handicaps was low, the estimated number of 6- to 11-year-old children in the United States with some hearing handicap was 213,000 and did not include those with impaired hearing who resided in special schools or in other institutions. Among the youths, an estimated 281,000 (1.5%) had some degree of hearing handicap.

The only significant relationships between hearing sensitivity of children and youths were the education of the household head and income level of the family--in the children's cycle, the association was stronger with parental education; in the youth cycle, with family income.

Physical findings from the examination of the ear, nose and throat are presented in Table 31. About 20 percent of the 6- to 11-year-old children, or an estimated 4.8 million, had some abnormality of either or both eardrums with equal frequency between right and left. For an additional 14 percent or 3.4 million, one or both of the auditory canals were so occluded that the eardrum could not be examined. Specific abnormalities included: bulging or retracted eardrum, 9 percent; eardrum red or otherwise discolored, 2 percent; perforated eardrum (0.3% for the right and 0.3% for the left ear); and scars, 2 percent. Other significant ear, nose and throat abnormalities found include: cleft palate, 0.2 percent, of which over 90 percent had been surgically repaired; deviated septum, 3 percent, and hypertrophic lympoid tissue, 7 percent.

Children with an abnormality of the eardrum on examination usually had a history of earaches, trouble hearing, injury to the ear, running ears, or other ear trouble. (Figure 8)

Tonsils were graded according to size. Twenty-four percent of the 6- to 11-year-old children had their tonsils removed (14% completely; 10% with tags still present). The number of children with their tonsils removed increased with age, with the sharpest increase between the seventh and eighth year. More boys than girls had their tonsils removed. Two out of five children (42%) had essentially normal tonsils. While there was no consistent age trend, a significantly lower number of boys than girls had normal tonsils. About a third of the boys and girls had enlarged tonsils, but not touching in the midline. Severely enlarged tonsils, which touched at the midline, were found among 1 percent of the 6- to 11-year-olds with equal frequency among boys and girls. The prevalence of both stages of enlarged tonsils decreased fairly consistently with age. (Figure 9) Completely or partially removed tonsils were found more frequently among white than black children, and less frequently among children from the South and from families with incomes of less than $5,000 a year.

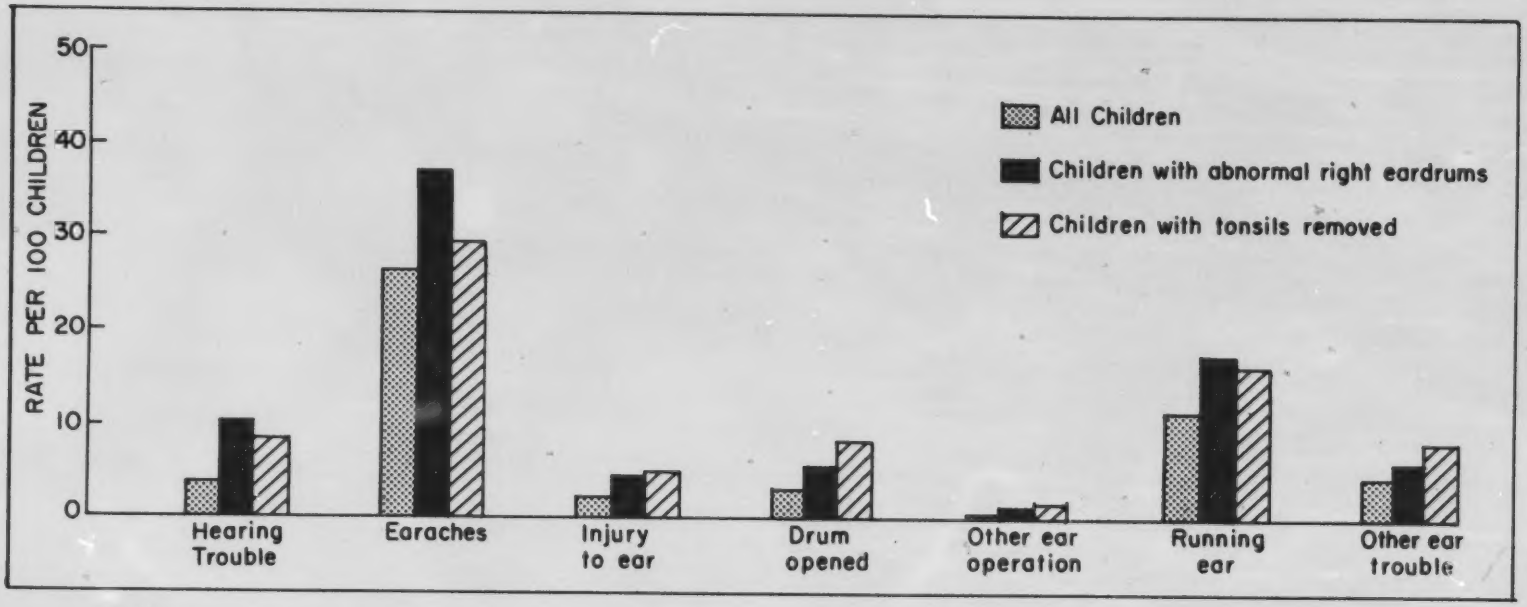
Visual Acuity

The survey included measurements of uncorrected visual acuity of both children and youths, and corrected visual acuity levels of the youths.

Visual acuity for children and youths who could read was tested with a commercial instrument, the Master Ortho-rater, which permitted rapid testing under controlled conditions of lighting and target distance from the examinee. For those who could not read or were unable to read in the allotted time, special wall charts for distance and cards for near vision with Landolt ring symbols were used.

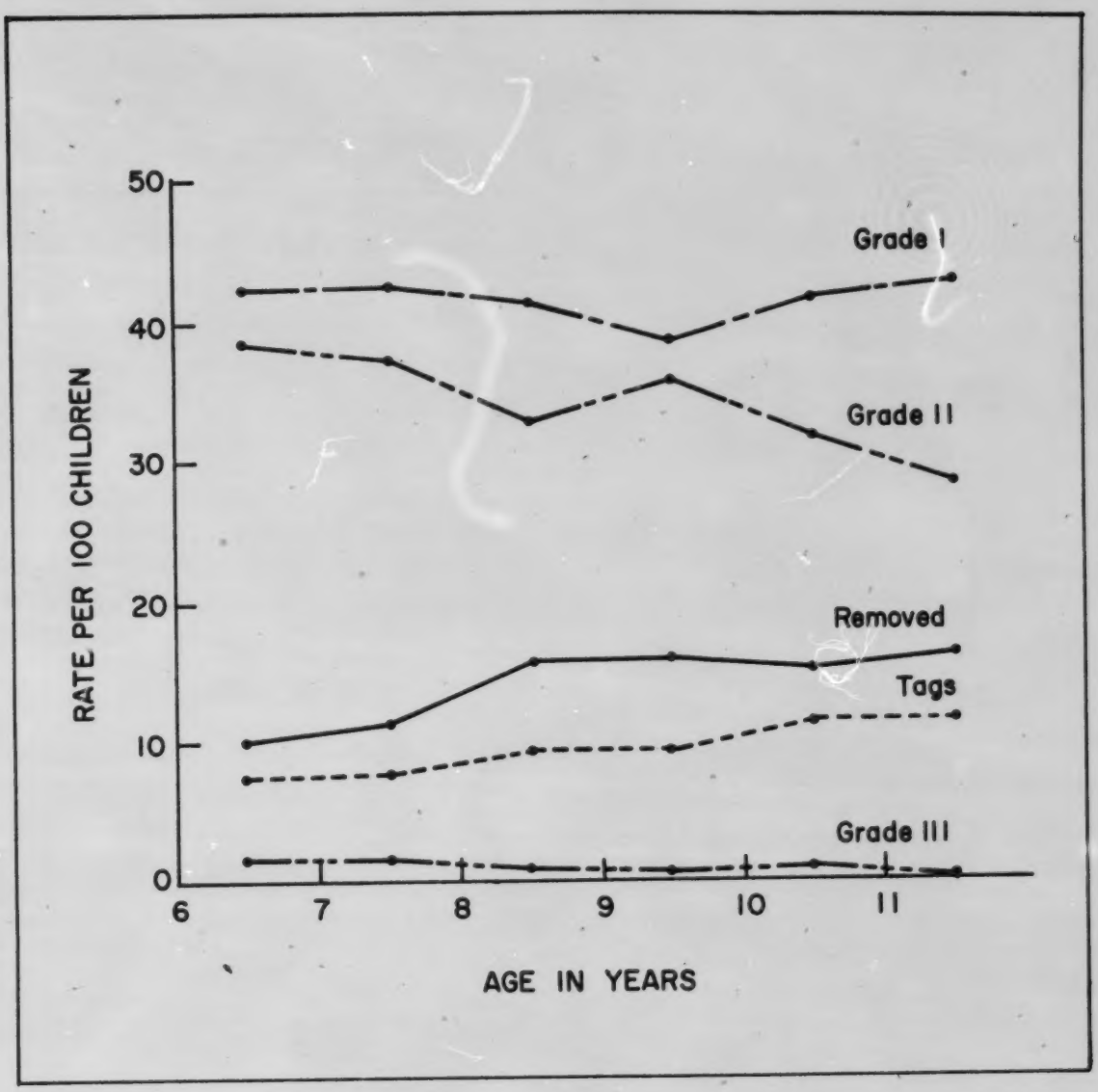
Among the 6- to 11-year-olds, an estimated 19.5 million children (75%) had at least "normal" or better than "normal" distance vision without correction (20/20 or better); 11 percent of the children had moderately to severely defective binocular distance vision, poorer than 20/30; 4 percent had severely defective distance, poorer than 20/70. (Table 32)

Fig. III-8. Prevalence of symptoms related to hearing among children with examination findings of abnormal right ear drum or with tonsils removed and all U.S. children aged 6-11 years: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 114, Figure 5, page 8.

Fig. III-9. Prevalence of conditions of tonsils among children 6-11 years of age: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 114, Figure 4, page 7.

Among youths 12-17 years of age, the percent with "normal" uncorrected distance vision was 70 percent. The percentage with vision testing poorer than 20/30 was 22 percent, and with severely defective uncorrected distance vision (poorer than 20/70), 12 percent.

More than 34 percent or an estimated 7.7 million youths owned either glasses or contact lenses. Information on the visual acuity of these subjects with their usual corrective or refractive lenses is limited to the examinees who brought their glasses or lenses to the examination (85% of those who owned them). With their usual correction, 88 percent of the youths had at least normal distance acuity compared to the approximately 70 percent without correction. Even with correction, 5 percent had moderately to severely defective acuity. (Table 32)

Normal or better than normal acuity (14/14 or 13/13 or better) was found in 73 percent of the 6- to 11-year-olds, and in 84 percent of the 12- to 17-year-olds. (Table 33)

The distribution of uncorrected distance vision among white and black children 6 to 11 years of age was generally similar. In the youth cycle, black subjects had substantially better unaided visual acuity than whites. However, with correction, white youths had significantly better acuity than their black peers. While fewer black than white youths needed glasses, of those who did, fewer had the necessary corrective lenses.

The prevalence of defective distance vision among children was related to parental education and to family income--the proportion with defective distance vision increased as the parent's educational level or the family's income increased. A similar association was found between unaided vision of youths and family income--youths from families with incomes of less than $3,000 a year had significantly better acuity unaided than those from families with incomes of $5,000 or more. However, there was a consistent reversed relationship between family income and refraction status--while fewer lower income youths needed glasses, of those who did, fewer had adequate refraction than their higher income peers.

The Dental Examination

The dental examination was limited to a 10-minute visual examination with a standard light source and mouth mirror. To avoid bias and variation, written objective standards were used and dentists were not allowed to dry or isolate teeth, remove oral debris and calculus, or probe surfaces that were not overtly decayed. The Decayed-Missing-Filled Index (DMF), defined as the total number of permanent teeth that are decayed, filled and either missing or indicated for extraction was used to assess tooth status.

The 6- to 11-year-olds averaged 1.4 DMF teeth--0.5 decayed, 0.1 missing and 0.8 filled. The mean number of DMF teeth rose from a fraction (0.2) at age 6 to a high of more than three teeth among the oldest children,

with the increase largely accounted for by filled and decayed teeth. (Table 34). Among the 6-year-olds, 86 percent had no DMF teeth; among 11-year-olds, 24 percent had none. The DMF index accumulated faster among white than black children. By age 11, white girls had an average of 3.4 DMF teeth, and black girls an average of 2.0. The corresponding figures for boys were 2.4 and 2.1. The higher DMF scores for whites were due to the larger number of filled teeth--1.6 and 2.2 among 11-year-old white boys and girls respectively; and 0.5 among both black boys and girls. Black children had more untreated decayed teeth. (Figure 10) Both income and education were significantly associated with the decayed and filled component of the DMF Index--the number of filled teeth increased and the number of untreated, decayed teeth decreased with socioeconomic status. (Figure 11)

Height and Weight

The height of the children and youths was measured in stocking feet, standing upright, back and heels against the vertical bar of the height scale and recorded with a polaroid camera. Weight was measured with a Toledo self-balancing scale that mechanically printed onto the permanent record.

The height curves were quite linear until 10-1/2 years for girls and 12 years for boys. At those ages the curves started an upward deflection which steepened for a year and a half and then began to level at less than 15 years for girls and above 17 years for boys. The two curves crossed twice--boys started out somewhat taller, girls grew taller just after age 9 and remained so for the next 4 years. Once they were passed by the boys at 13 years, the gap continued to widen. (Table 35, Figure 12)

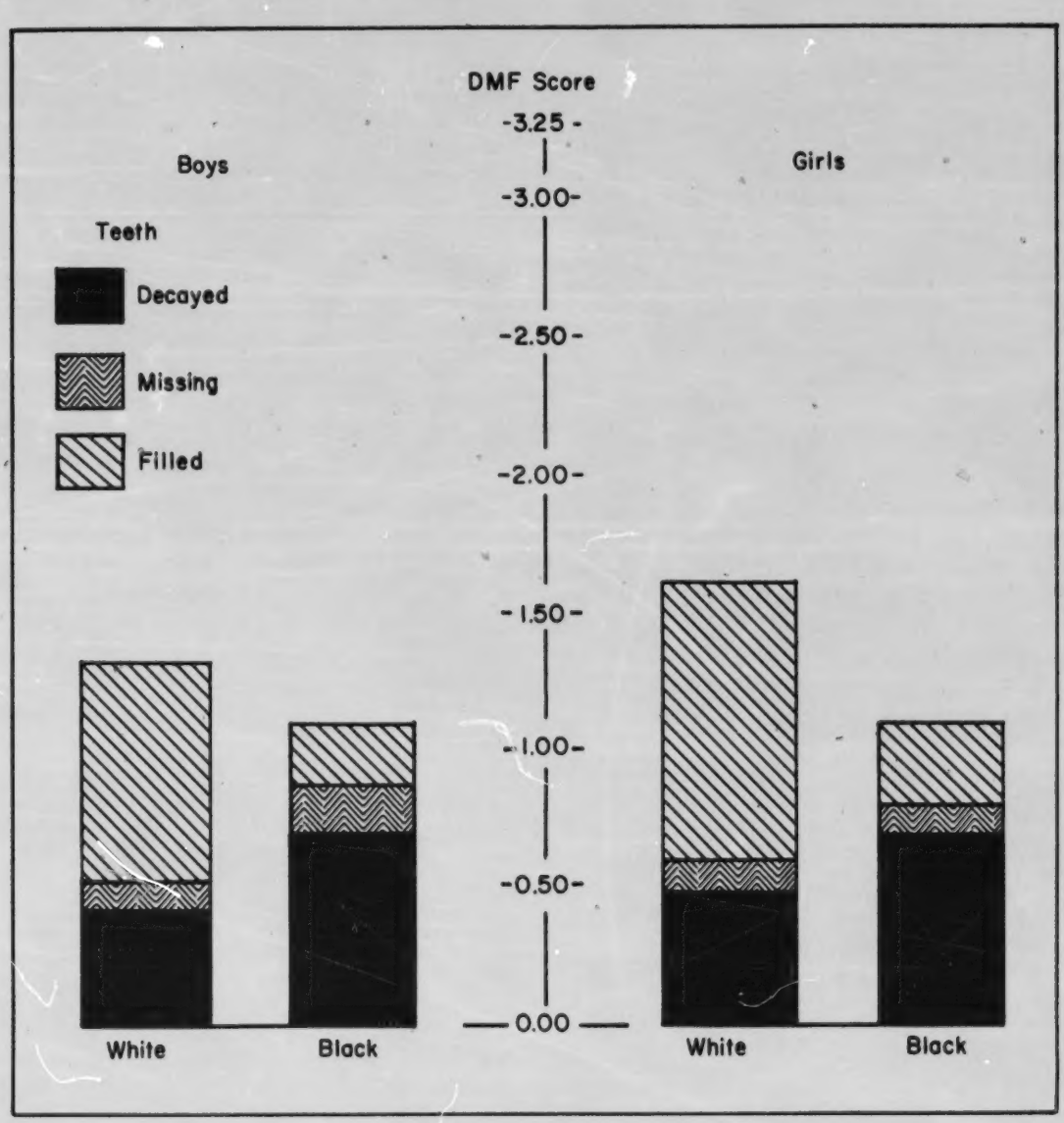
Between 6 and 8 years, boys were slightly heavier than girls; at age 9 the positions were reversed and girls remained heavier than boys for almost 5 years. From 14 to 17 years the gap between boys and girls widened. The weight curve did not show the same leveling for boys as the height curve. (Table 35, Figure 13)

A comparison of black and white children over the entire 12-year span showed different patterns for height and weight for the two sexes.

Black and white boys had similar height growth. Black boys started out slightly taller, remained so until the age of 9; from 9 to 12, white boys were taller than their black peers by a similar small margin; from 12 to 14, the mean heights were virtually identical for the two groups until at 14 years the white boys once again became and remained somewhat taller than blacks. (Figure 14) Throughout the 12 years, however, the differences attained in mean heights were negligible and the height spurts were identical when timing and relative magnitude were compared.

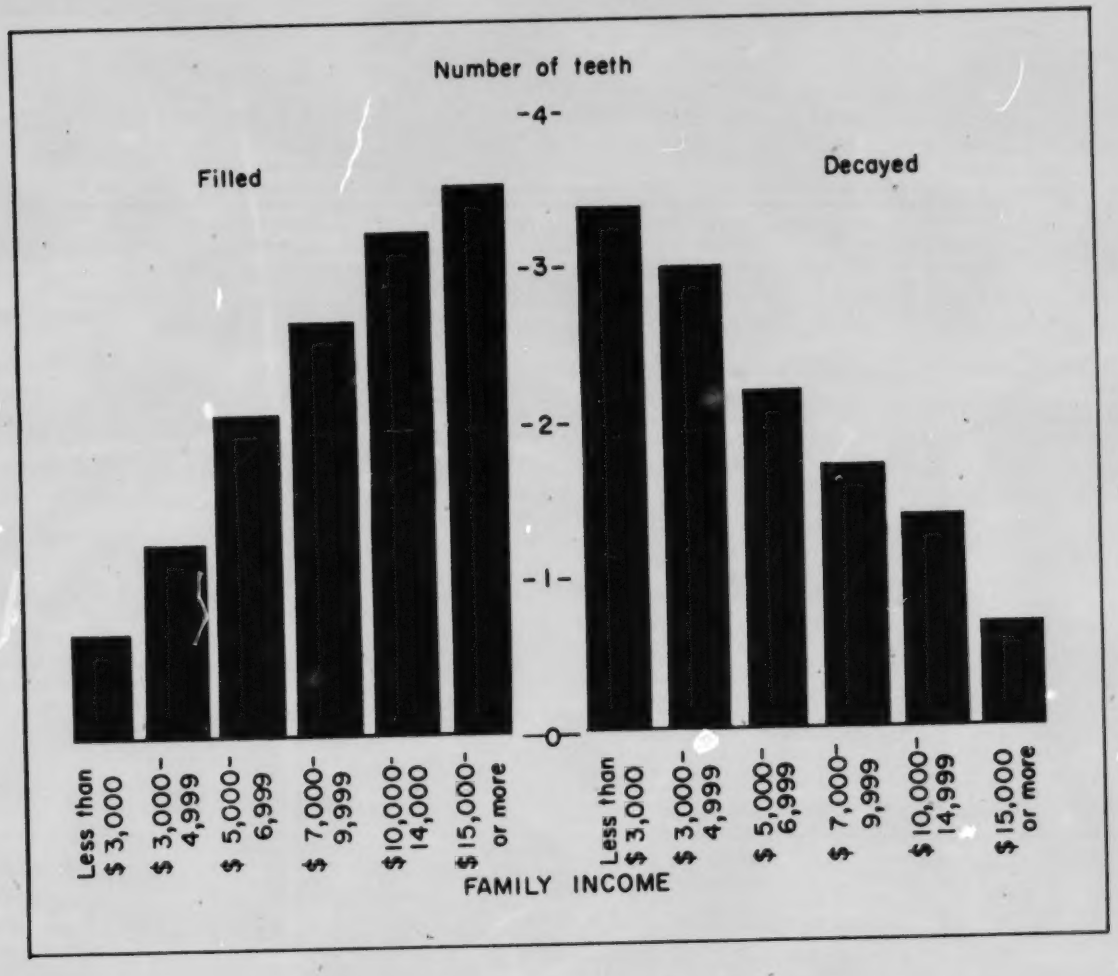
The weight curves of black and white boys showed a strikingly different course. Up to the age of 12 years, the mean weights of white

Fig. III-10. Mean number of decayed (D), missing (M) and filled (F) teeth and mean number of DMF components for boys and girls, by race: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 106, Figure 3, page 5.

Fig. III-11. Average numbers of filled and decayed primary and permanent teeth per child by family income: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 106, Figure 5, page 9.

Fig. III-12. Distance curve of mean heights attained by youths 6-18 years by quarter-year age groups smoothed by a five period moving average: United States, 1963-1970.

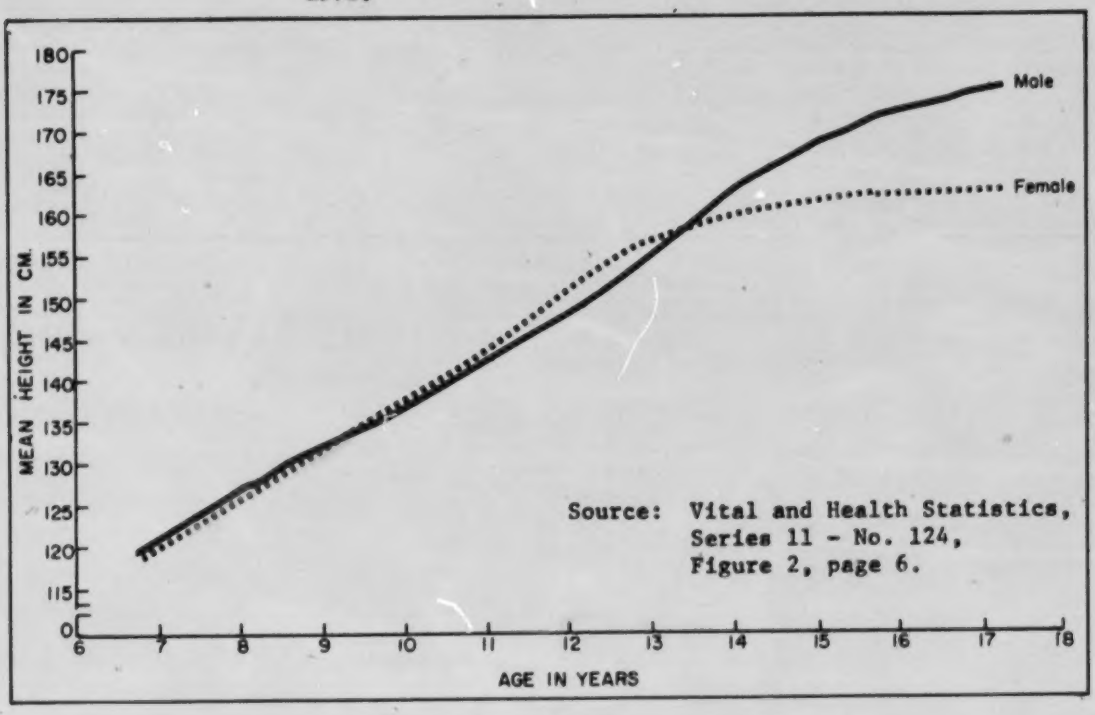


Fig. III-13. Distance curve of mean weights attained by youths 6-18 years by quarter-year age groups smoothed by a five-period moving average: United States, 1963-1970.

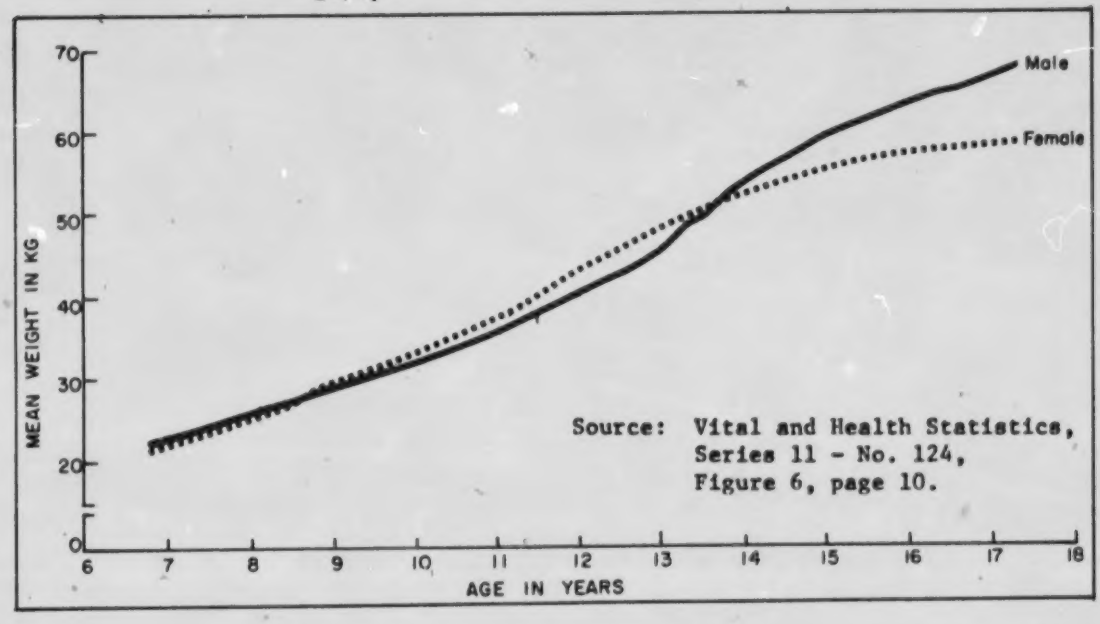
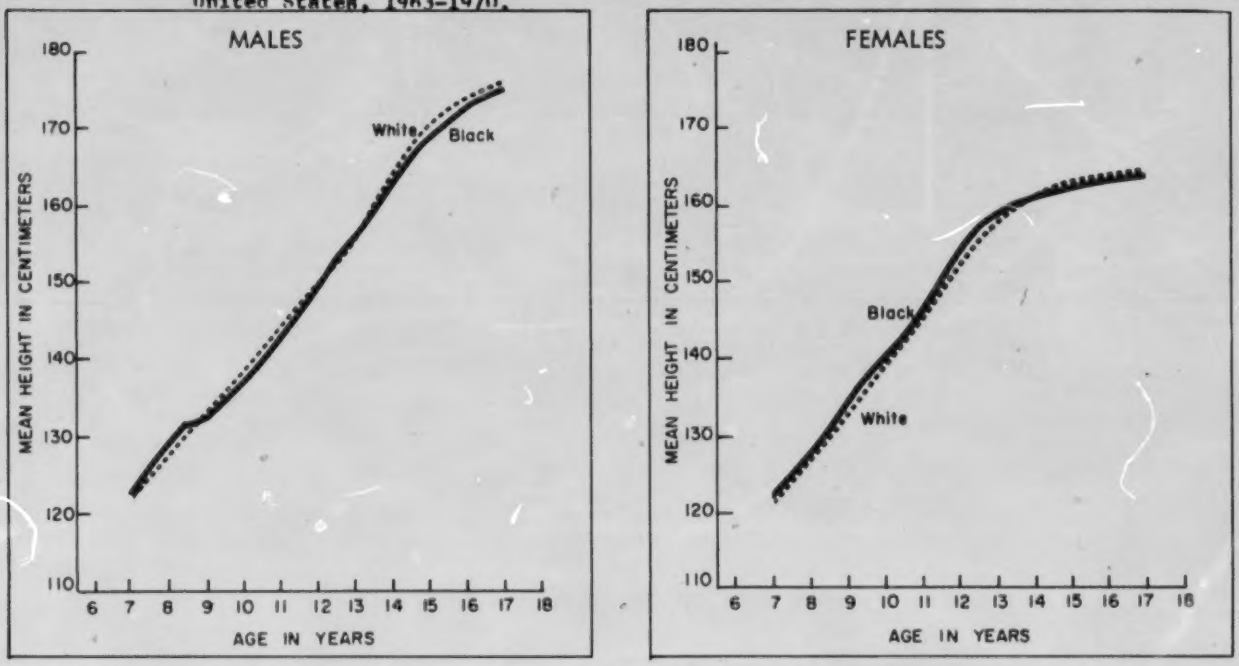
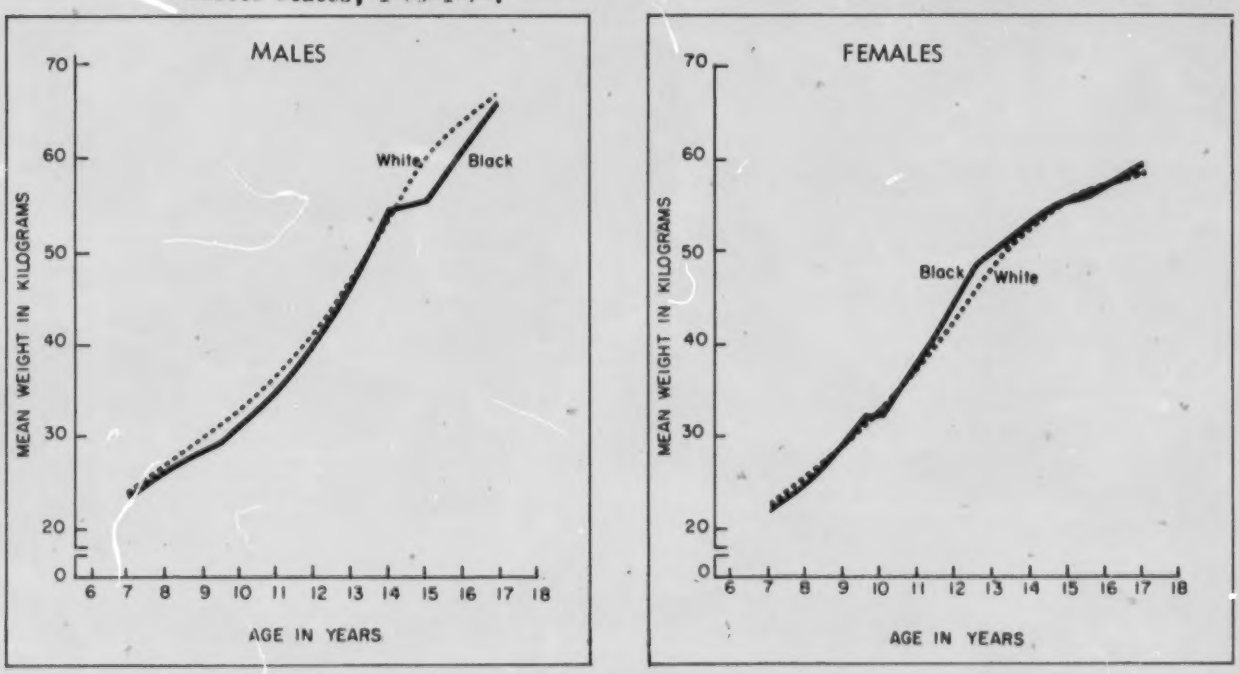


Fig. III-14. Distance curves of mean heights attained by males and females 6-18 years by race, United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 126, Figures 2 and 4, page 5.

Fig. III-15. Distance curves of mean weights attained by males and females 6-18 years by race, United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 126, Figure 9, page 10, and Figure 11, page 11.

boys were greater than those of their black peers. At 13 and 14 years, the weights converged, but for the later part of adolescence, the mean weights of white boys again tended to be greater than those of blacks. (Figure 15)

The girls' pattern of racial differences was quite unlike that of boys. Black girls were consistently taller than white girls from 7 to almost 14 years, when the positions became and remained reversed. The black girls' height velocity, which peaked both higher and earlier, also diminished earlier. Despite their greater height, black girls tended to weigh less than their white peers in childhood. Between 11 and 15 years, black girls were heavier than their white peers, a reflection of their earlier growth spurt. Beyond 15, there were no consistent differences in the mean weights of the two groups of girls. (Figures 14 and 15)

Small but consistent regional differences were noted for the mean heights and weights of the 6- to 11-year-old children. Boys and girls of the Northeast and Midwest were almost always the largest, and children of the South and West the smallest. (Figure 16) Urbanization had no discernible effects on the height and weight of children.

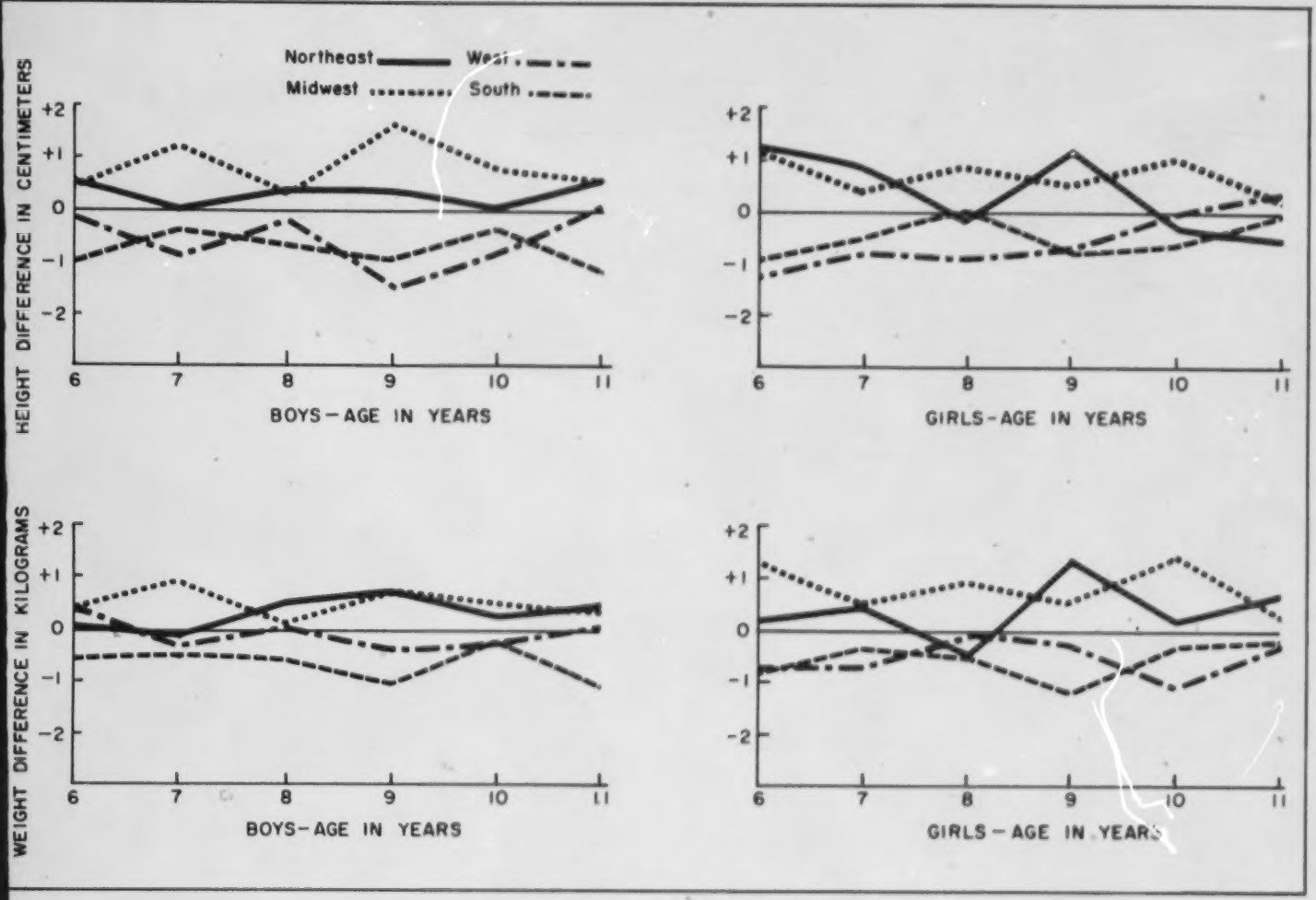
Careful and detailed analyses were done between the height and weight of 6- to 11-year-old children and the socioeconomic status of their families. Height and weight seemed equally sensitive to socioeconomic effects for both boys and girls throughout the 6-year age span, and as income and educational level increased, the physical size of the children increased as well. The relative magnitude of the effect of parental education and family income on children's growth could not be differentiated with precision. The high correlation and complex interaction of the two factors permitted only the most cautious suggestion that the educational level of the parents was associated with normal healthy growth slightly more than income.

Separate analyses for the two racial groups showed the variation in growth measures by socioeconomic level for white but not black children. (Tables 36-37) The lack of association between height and weight and family income or parental education among black children was attributed to the small sample size. The number of black children was less than one sixth that of whites, and the survey summary cautioned against inferring that socioeconomic factors affect the growth of black and white children differently.

Skinfolds

Skinfold measurements were taken on the right side of the body at each of three sites: (1) Triceps, on the posterior aspect of the upper arm midway between the acromial and olecranon processes; (2) Subscapular (or infrascapular), on the back immediately below the inferior angle of the scapula; and (3) Midaxillary on the lateral wall of the chest, in the midline of the axillary region at the level of the nipple.

Fig. III-16. Mean height and weight differences from the national average for U.S. children, 6-11 years of age, by geographic region and sex: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 104, Figure 10, page 7.

Tables 38, 39 and 40 give the means, standard deviations and percentiles for each skinfold by age, sex and race and show that in all cases the distribution is skewed to the right and that the amount of skewness increases with age. It is clear that for all skinfolds there is a minimum thickness of skin and subcutaneous fat; the upper ranges are large and variable. Since means and standard deviations do not accurately characterize the distribution, median and percentile values are used to summarize results (See Figure 17, 18 and 19 for median values by age, sex and race for the three skinfold measurements).

Throughout the childhood years, with the exception of the boys' triceps skinfold, there was a rather steady increase in the median values for each of the three skinfolds. The decrease in limb fat in boys was clearly associated with their growth spurt. The pattern of the white girls, although less marked, was similar to that of the boys.

When comparing skinfold values from children of the same race, girls always had values equal to or greater than the boys. Sex differences increased with age. The greatest absolute differences existed in limb fat as indicated by the triceps skinfold. Triceps skinfold values for girls were almost two times the values for the boys at 17 years for both white and black children. (Table 38).

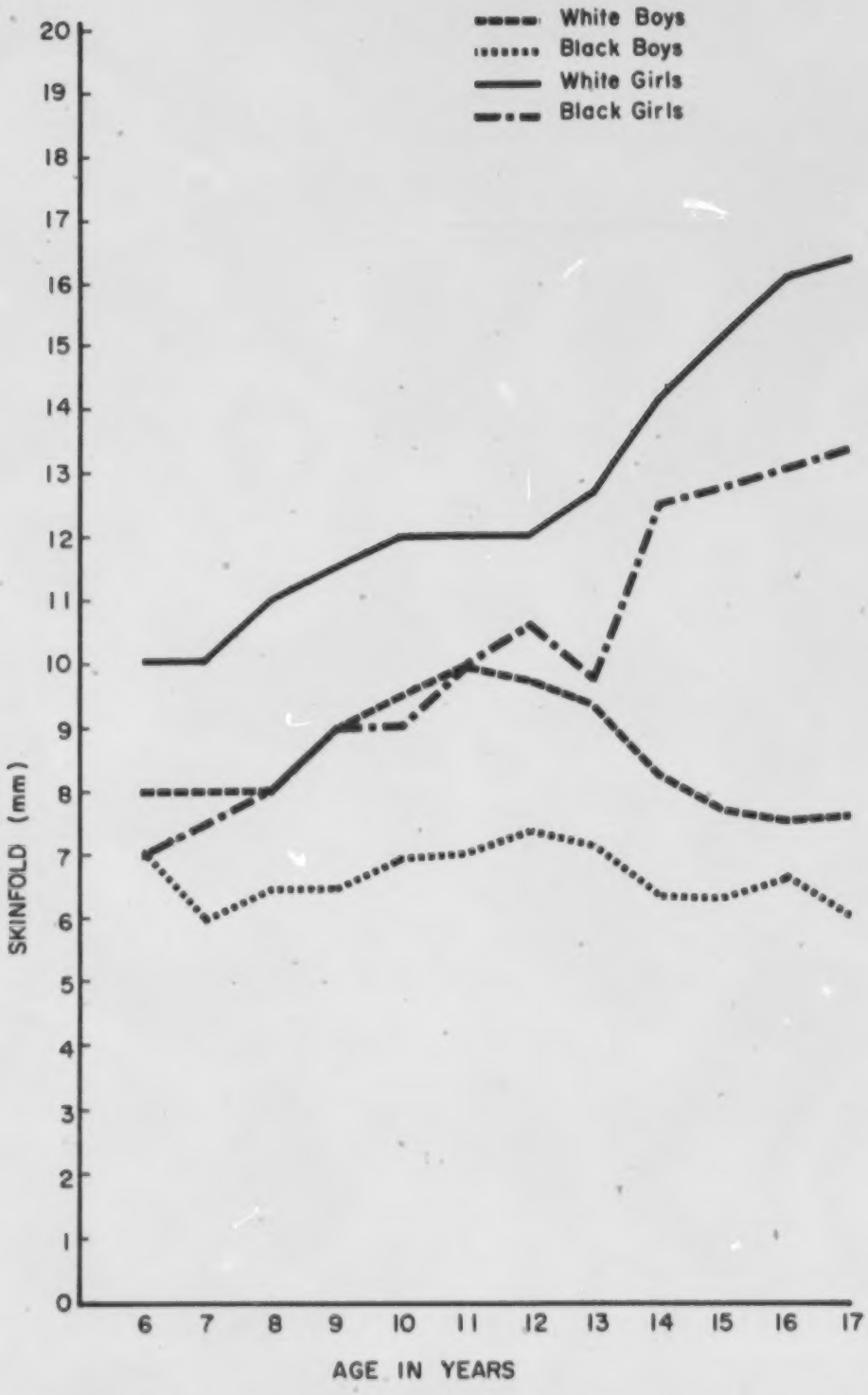
The fifth percentiles for all skinfolds were the least likely to change from year to year. Skinfolds on a thin young child were not unlike those of a very thin older child. Conversely, the 95th percentiles changed considerable with age, indicating increasing accumulation of subcutaneous fat.

At all ages, racial variation was most striking at the triceps skinfold site. (Figure 17). White children of both sexes had median triceps skinfolds which were about 25 percent greater than those of their black peers. White values tended to be greater also at the midaxillary site, although the magnitude of the differences was not as great and the trend was not as consistent as at the triceps site. No racial differences were found when comparing median subscapular values. (Figure 18). The only real racial difference in trunk fat (as indicated by midaxillary and subscapular skinfolds) appeared to be in the degree of skewness of the skinfold distributions. While white median values for trunk fat were not always greater than black values, 95th percentile values for the white children were consistently greater, indicating a greater number of white children with extremely high values. Environmental factors may tend to skew the skinfold distribution curves, and be responsible for racial differences at the trunk site. However, the variation of skewness between the sexes of each race casts doubt on this explanation. The midaxillary skinfold distribution is clearly more skewed for white boys than for white girls.

Summary

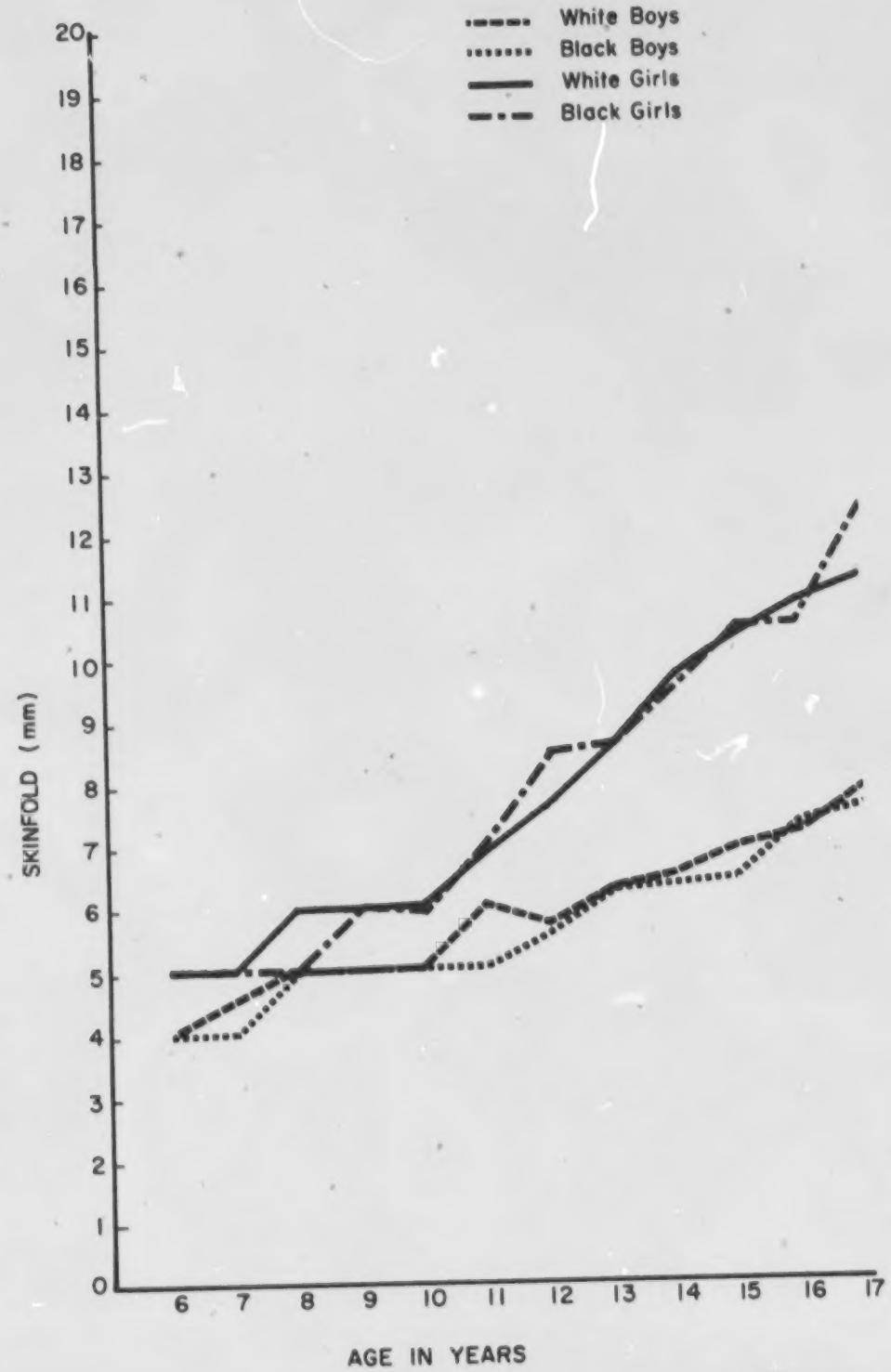
This brief concluding section is used to call attention to findings that are public health concerns rather than to summarize an already too cursory presentation of the Health Examination Survey results.

Fig. III-17. Median triceps skinfold of children and youth ages 6-17 by race, sex, and age at last birthday: United States, 1963 1970.



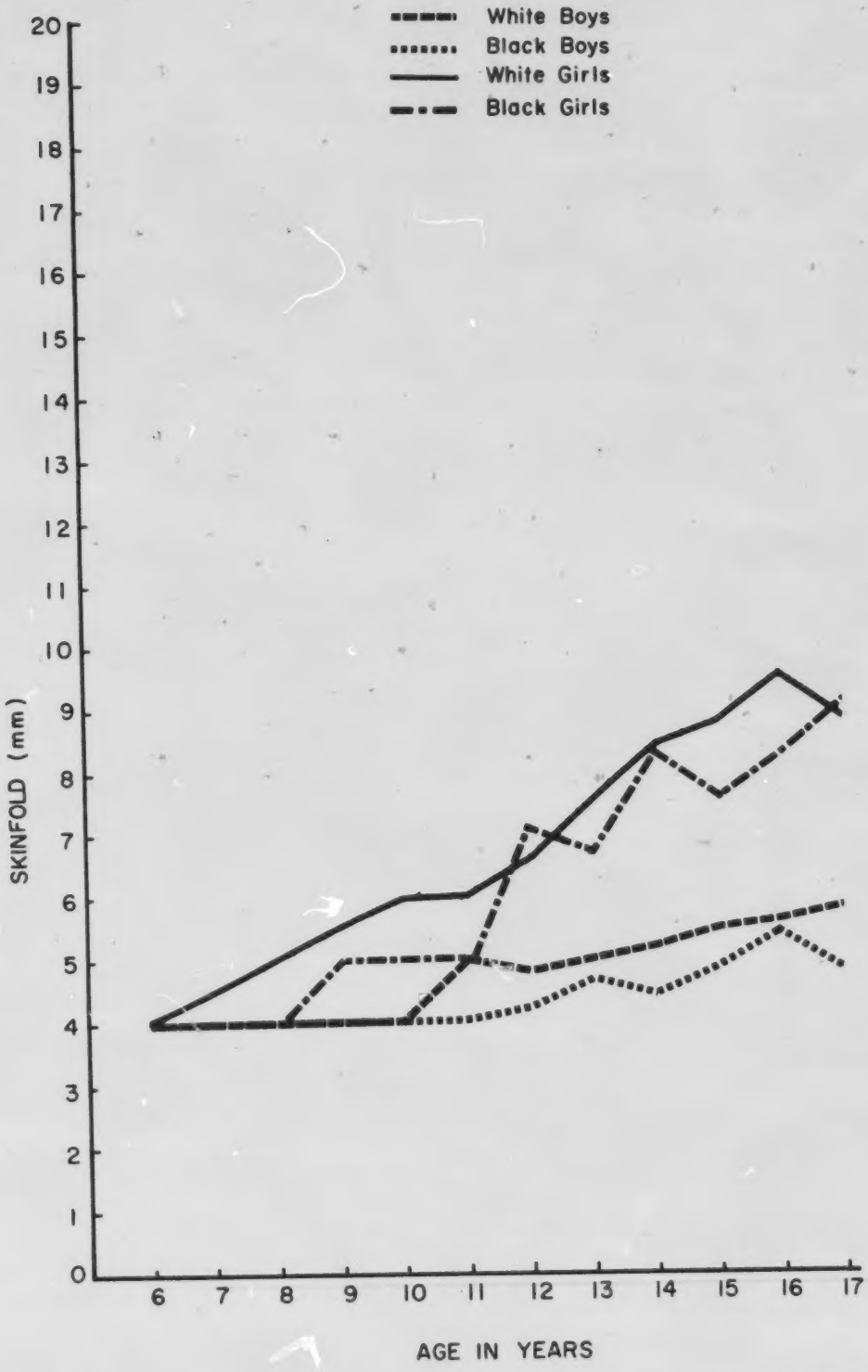
Source: Vital and Health Statistics, Series 11 - No. 120, Table 4, page 23, and Series 11 - No. 132, Table 7, page 23.

Fig. III-18. Median subscapular skinfold of children and youth ages 6-17, by race, sex, and age at last birthday: United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 120, Table 5, page 24 and Series 11 - No. 132, Table 8, page 24.

Fig. III-19. Median midaxillary skinfold of children and youth ages 6-17, by race, sex, and age at last birthday: United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 120, Table 6, page 25, and Series 11 - No. 132, Table 9, page 25.

While there was generally good agreement between the parent's evaluation of their children's health and the children's health status, parents did err in both directions--they were not concerned about children who proved to have significant health problems, or, more often, were concerned about children whose health was good.

Freedom from worry about health and sound growth were associated with socioeconomic status. In families that were poor, both worry about health and the number of health problems were greater than among economically more privileged families. The greater number of corrigible but uncorrected health problems among the children and youths from low income families suggested that medical attention and resources were unequally available or used. There were racial as well as economic differences; for example, black youths had better unaided visual acuity but were less likely to have the necessary corrective lenses; black children were less prone to tooth decay than white children but had more untreated decayed teeth. The removal of tonsils was clearly associated with a family's ability to pay for the procedure and was much less common among low income and black children.

The children's and youths' health histories also raise concern--the prevalence of acute conditions, especially upper respiratory diseases and accidental injuries; the frequency of hospitalizations; and the numbers on regular medication.

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IV. THE HEALTH EXAMINATION SURVEY:

PSYCHOLOGICAL EVALUATION OF CHILDREN AND YOUTHS

UNITED STATES, 1963-1965; 1966-1970

Since the children and youth cycles of the Health Examination Survey were concerned with all factors related to growth and development, approximately 1 hour of the 3 hour examination was allocated to a psychological examination. It included measures of intellectual maturity, scholastic achievement and personality and was supplemented by information elicited through questionnaires and interviews with the parent, teacher and, among the older subjects of the youth cycle, the youths themselves.

The psychological test battery consisted of the Vocabulary and Block Design subtests of the Wechsler Intelligence Scale for Children (WISC), human figure drawings, selected cards from the Thematic Apperception Test (TAT), and the arithmetic and reading sections of the Wide Range Achievement Test (WRAT). For the 12 to 17-year-olds, a brief reading and writing test of literacy was developed. The choice of tests represented the best compromise in terms of instruments that were available and suitable for use in a survey in which time was limited and examining conditions less than optimal. The hope also was that they would yield information in those areas considered most important to the study of growth and development and in a form that would be meaningful to those responsible for children's health.

Some of the ancillary data enhanced the psychometric evaluation. The household questionnaire, the basic source of demographic information about the family, dealt with school and grade placement and the occurrence of such events as severe illness or death in the family that might have been traumatic for the child. The medical history form used in the children's cycle encompassed questions relating to early developmental landmarks as well as selected current behaviors and habits. The interviewer-administered part of the medical history for children dealt with more sensitive areas through personal inquiry about eating habits, peer relationships, use of time and the parent's perceptions of the child's mood and temperament. In the youth cycle, both parent and youth were asked about these as well as educational goals, behavior standards and family patterns in decisionmaking. A questionnaire, completed by the teacher, provided confirmation of the child's or youth's grade placement and information about academic performance, school adjustment and peer relationships in the school setting.

Like the physical examinations, this first general survey of psychological functions of children and youths has resulted in a wealth of information and, like the previous chapter, this summary of the psychological evaluation is selective. The selection of results and issues

for presentation was again chiefly guided by their importance for public health workers. Other results are included because they challenge widely accepted notions about psychological functions and differences; still others, because of their intrinsic interest.

The Parent and Youth Ratings

The parent ratings and the youths' self-reported attitudes are an appropriate beginning for the summary of the psychological evaluation; since, they provide general insights about the development and behavior of American children and youths.

The self-administered parent questionnaire used in the children's cycle inquired about the child's early developmental history. In recalling landmarks of 5 to 10 years earlier, the parent reports largely confirmed findings of other studies (Gesell, 1934, 1938, 1941, Bayley, 1933; Cattell, 1940). Nearly half (48%) of the children had started walking and 43 percent had spoken a distinct word by their first birthday. Ninety-five percent were walking and 84 percent saying a word by a year and a half. Parental estimates of overall learning speed showed that one child in five was considered to have learned to do things faster and less than one in 20 more slowly than other children, with more girls than boys rated as fast learners (Table 41).

In the youth cycle parents were not asked to recall early landmarks but to evaluate their child's overall development. About 95 percent thought the youths had developed at the proper rate. Among the remainder, more parents said the development was too slow than too fast, with twice as many boys than girls reported to be slow. To the general questions asked in the youth cycle, "How much trouble was he or she to bring up?", three-fifths of the parents stated they experienced none, but more often perceived difficulties in the rearing of boys than of girls.

A variety of questions provided a gauge of specific behavior problems and overall adjustment. Two percent of the 6 to 11-year-olds had frequent and 42 percent occasional unpleasant dreams or nightmares. Nearly one child in four was afraid to be left alone in the dark. The prevalence of this fear, more common among girls than boys, declined with age. More than one child in four (27%) was influenced in getting to sleep by TV, radio or the movies. (Table 42). One fourth of the children (26%) were reported to have had a severely upsetting or disturbing experience, but the descriptions of these events were too varied to classify.

In the youth cycle, questions related to sleep patterns and disturbances were addressed to the youths themselves. (Table 43). Slightly over one half said they suffered from insomnia: 7 percent "very often" and 44 percent "only from time to time." Girls and older youths expressed the complaint more often than boys and younger ones. About 3 percent of

the 12 to 17-year-olds reported frequent bad dreams or nightmares with no difference by sex and no clear-cut trend with age. Occasional bad dreams were more common among girls than boys (47% and 39% respectively).

More than one child in seven (15%) wet his bed, with a sharp decline from 21 percent at age 6, to 10 percent at 11. At each age level, boys were more likely than girls to be enuretic. (Table 44). Among the 12 to 17-year-olds, 5 percent had wet the bed during the year preceding the examination, again with a higher proportion of boys than girls and a general decline with age to less than 2 percent by 17 years. (Figure 1). In the youths' but not the children's cycle, enuresis was related to health status and showed a clear-cut relationship -- the poorer the child's health as judged by the parent, the greater the prevalence of bedwetting. (Table 45).

Thumb or finger-sucking persisted among 10 percent of the 6 to 11-year-olds somewhat more tenaciously among girls than boys. It declined sharply with age and by 11 years the sex difference was negligible.

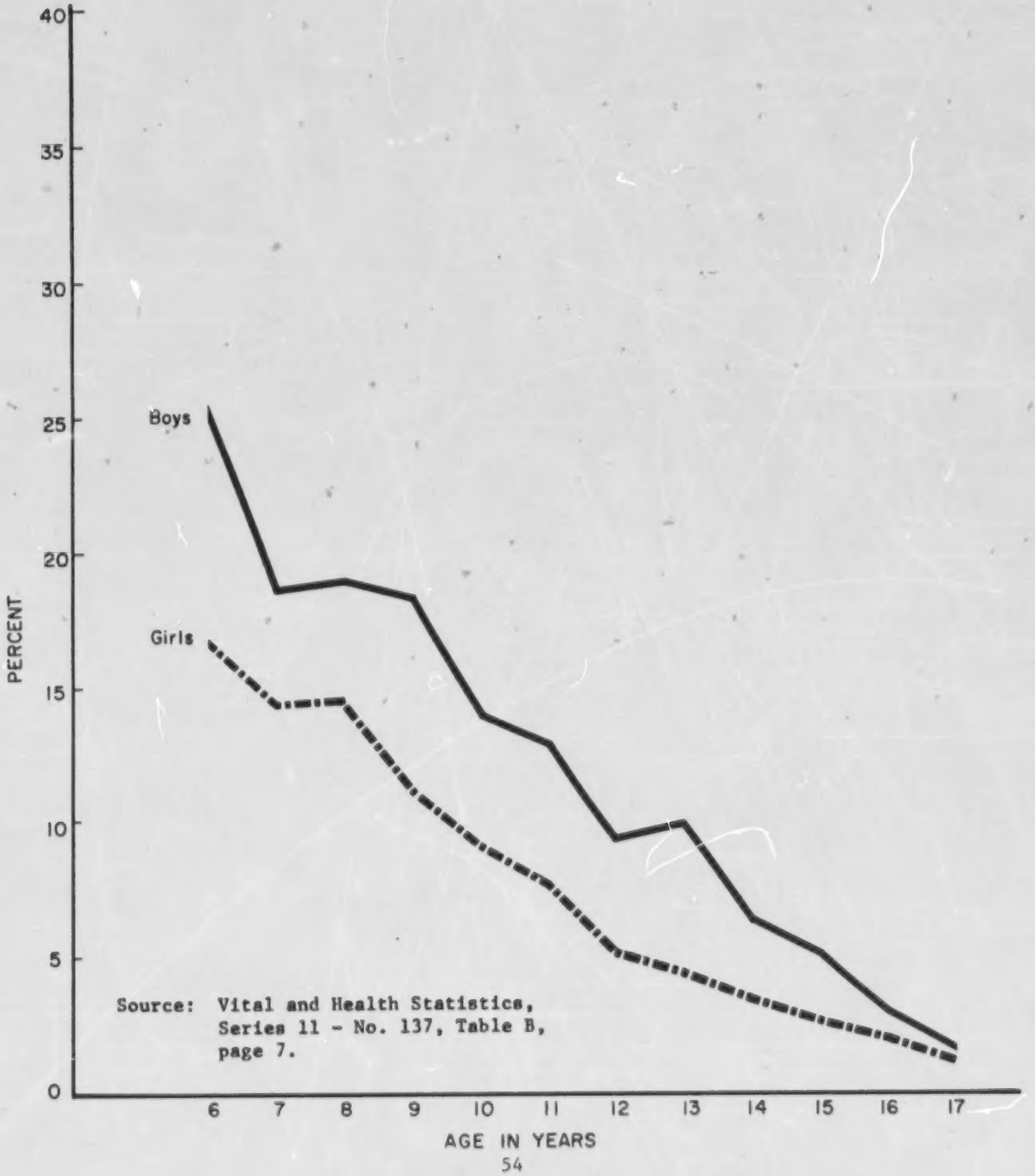
The parents of the younger children were asked about tension or nervousness and temper control. One child in six (17%) was considered high strung, tense or nervous, and an additional 28 percent were rated as moderately tense. (Table 46). Among the youths, half were reported by their parents as "not nervous at all" and 4 percent as very nervous, with little variation by sex and age. (Table 47). According to the parents, nervousness was associated with trouble in making friends, slow mental development and physical growth, poor health, a tendency to exaggerate illness, fussiness about food, and bedwetting.

When the youths themselves were queried about the frequency of anxiety, that is, feeling tense or nervous, the self-reports differed markedly from the parental evaluation -- only 20 percent of the youths reported never feeling anxious. (Figure 2). About 8 percent had such feelings often, 36 percent sometimes and 36 percent only rarely. Anxiety was more frequent among girls than boys and tended to increase with age. (Table 48).

Among the 12 to 17-year-olds, 6 percent had received care in mental hospitals, guidance clinics or by a psychiatrist or psychologist outside such facilities. Projected to the national youth population, 1.4 million adolescents had received some mental health services.

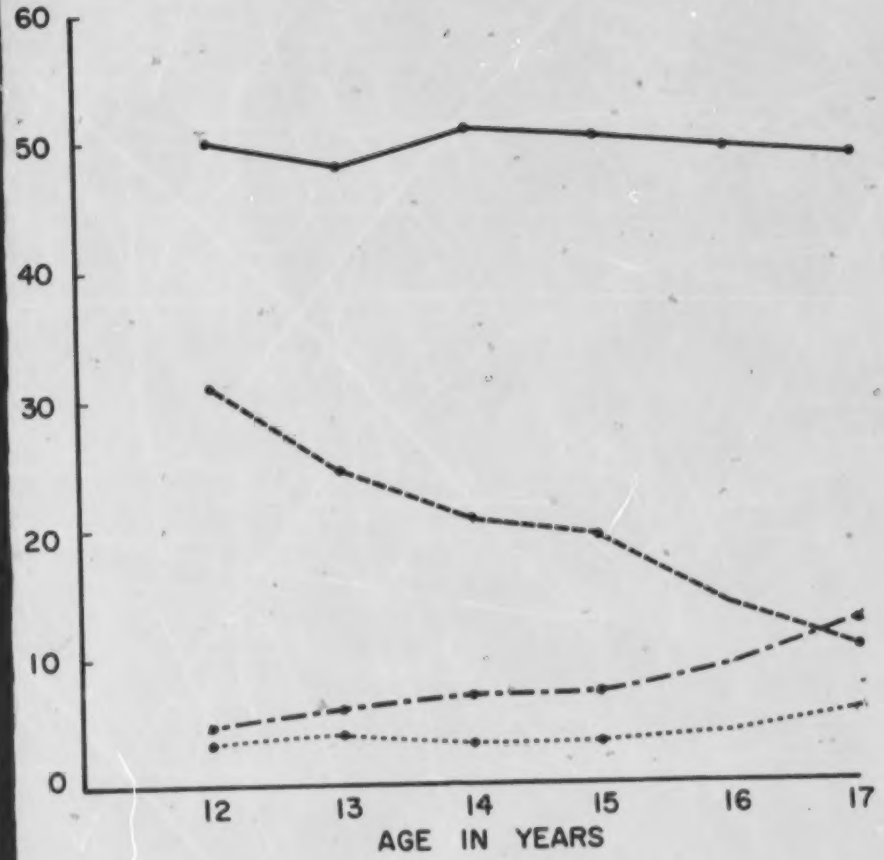
In both cycles there were some indirect measures of family relationships and styles which conveyed a picture of closeness. For example, parents were asked about eating patterns, and over 90 percent reported that the 6 to 11-year-old children ate two or more meals with their families. Among the 12 to 17-year-olds, three out of five continued to eat at least two meals a day with their families, although the numbers declined with age, especially among the girls. (Table 49).

Fig. IV-1. Percent of children and youths reported to have wet the bed during the past 12 months, according to age and sex, United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 137, Table B, page 7.

Fig. IV-2. Percent distribution of youths by degree of nervousness as rated by parents and self-rated frequency of anxiety feelings, according to age, United States, 1966-1970.



Source: Vital and Health Statistics, Series 11 - No. 137, Table 18, page 29, and Series 11 - No. 147, Table 2, page 26.

Four-fifths of the parents interviewed in the children's cycle stated they knew all, almost all or quite a number of their children's friends, and there was essentially no change in this proportion with age and no difference among boys and girls. Three-fourths of the parents of 12 to 17-year-olds said they were acquainted with most of their children's friends. Even among the adolescents, sex differences were slight and there was no consistent trend with age. (Table 50).

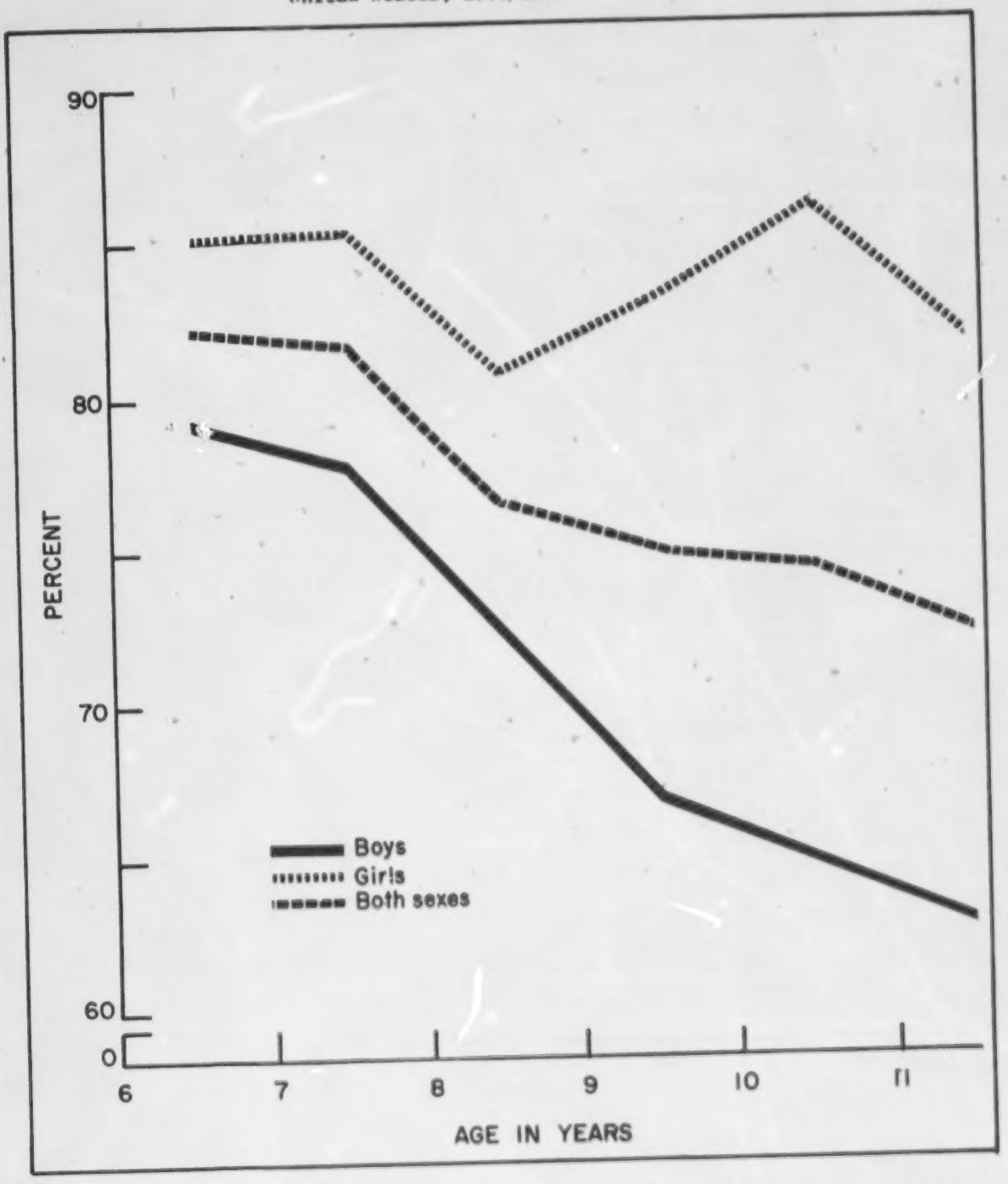
More than three out of four children (77%) did not spend any substantial amount of time away from home in which parents did not know where they were. The percentage declined with age and was largely accounted for by the boys. (Figure 3). Girls were much more likely to spend only negligible amounts of time away from home without their parents' knowledge of their whereabouts, regardless of age. Lengthy separations from the family (2 months or more) was one indicator of independence in the youth cycle; even among 17-year-olds, less than 25 percent had been away that long and, of those, more than half had stayed with relatives.

A number of other questions were asked of the youths related to their degree of autonomy in decisionmaking as a gauge of family relationships and the development of independence. Table 51 summarizes the responses by sex and selected age groups and shows the greater independence of boys than girls and the increasing independence with age. More notable than these predictable associations with sex and age are the differences in decisionmaking practices. While more than three-fifths of the 17-year-olds (64%) were autonomous in spending money, only one-seventh (13%) were free of parental restrictions on how late to stay out.

When asked to assess the importance of a variety of personal traits and values, the youths showed a high degree of conformity and compliance. (Figure 4). It should be noted, however, that the ratings were done in response to a listing of eleven traits and values, and that the traits were not spontaneously selected by the youths themselves. Obedience to the law was most frequently rated by boys as extremely important, with obedience to one's parents a close second. Among girls, obedience to the law tied with neatness and cleanliness as the traits most frequently chosen as extremely important. There were some variations with sex and age, but the most notable result was the importance ascribed by all the youths to these conventional values.

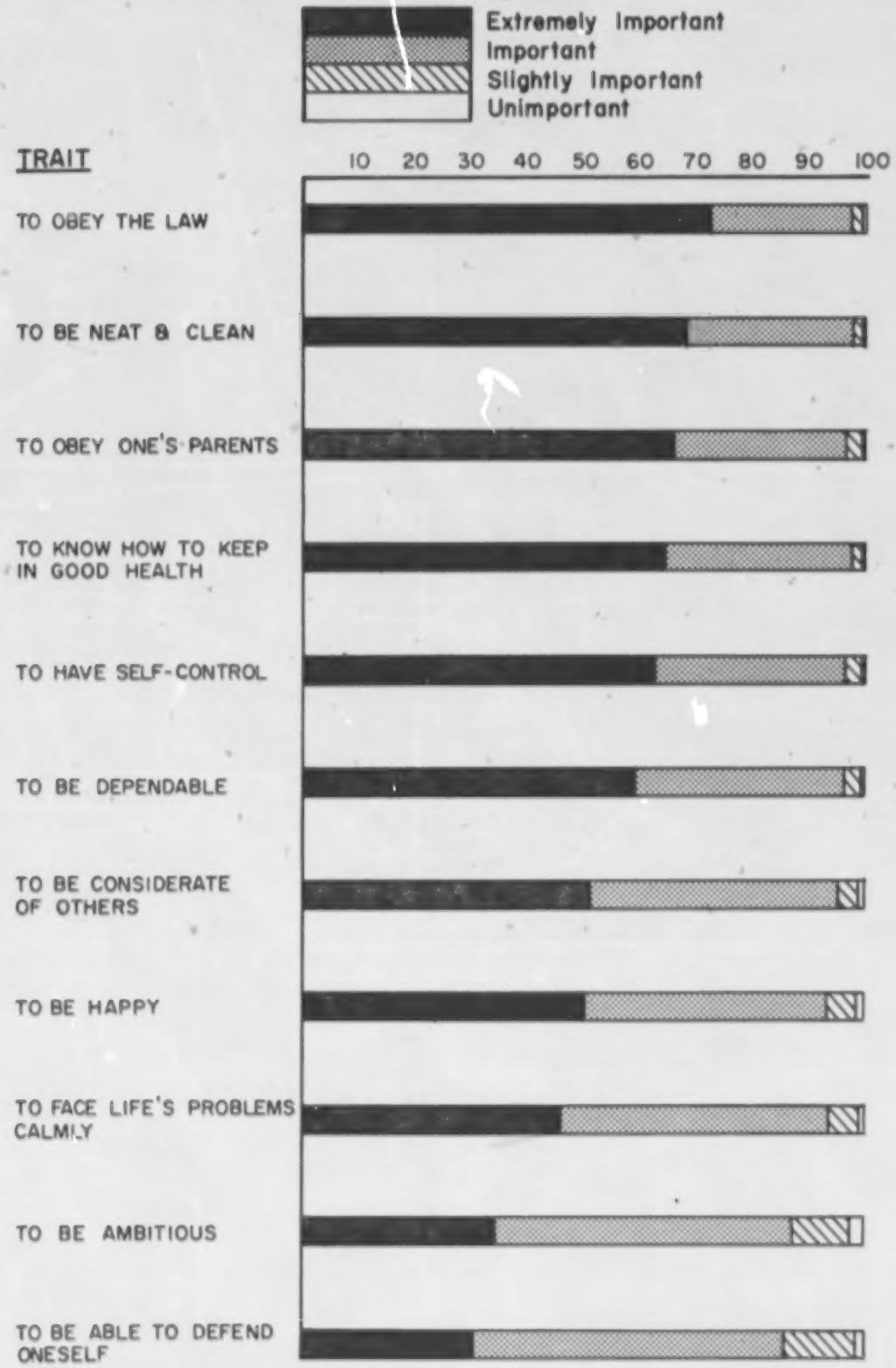
Despite these professed values, when asked, "How many times have you had anything to do with police, sheriff, or juvenile officers for something you did or they thought you did," 44 percent of the 17-year-old boys had had at least one contact with police or other authorities. Almost one in five of both sexes and all ages (19%) had at least one contact, and a third of these more than one. The reasons most commonly included thefts, traffic violations, fighting, vandalism, school-related problems, drinking, possession of illegal drugs and a variety of minor

Fig. IV-3. Percent of children with whereabouts known to parents at all times in a usual day, by age and sex, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 108, Figure 6, page 11.

Fig. IV-4. Percent distribution of youths aged 12-17 years by attitudes toward selected traits, United States, 1966-1970.



Source: Vital and Health Statistics, Series 11 - No. 147, Table F, page 15.

offenses and usually did not result in formal charges or arrests. Only 15 percent of those with police contacts and 3 percent of all youths had been arrested. Although, there is some question about the accuracy of these rates since some may have confused questioning with being charged or arrested. (Table 52).

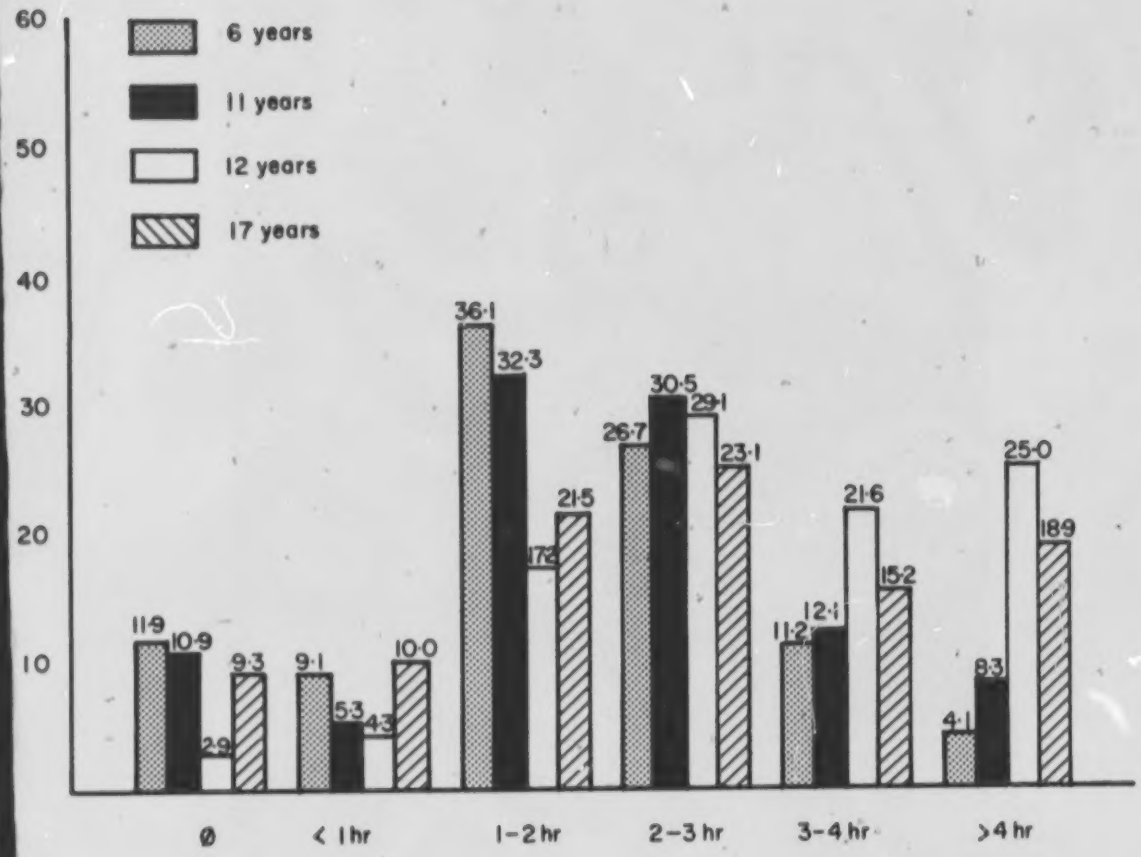
Parents were asked about their children's ability to get along with other children, and rated 95 percent of the 6 to 11-year-olds as having no difficulty. The low rate of children with difficulties (4%) showed no age-related trend but tended to be higher, though not significantly, among boys than girls. The findings were contrasted to those of a study of third graders in the St. Louis public schools (Glidewell, 1968) where the prevalence of the problem was four times as high, and higher among girls than boys.

In the children's cycle the parents were asked about the use of leisure time and reported that of the 5 to 6 available hours of each day, the children spent the major portion watching TV or playing with friends. Reading of books, newspapers, comics or magazines and doing chores took up what little time remained. (Table 53). In the youth cycle, the youths themselves estimated the times spent on various leisure activities. As with the younger children, TV was a major pastime. (Table 54). The typical (median) time was almost 3 hours a day. TV viewing tended to decrease with age, but even at 17 years, nine out of ten watched some TV every day. (Figure 5). Less time was spent on reading of any kind: median reading time for newspapers, comics or magazines was 45 minutes a day and equal for boys and girls; more than 1 hour for girls and less than 1 hour for boys were the median times spent in reading books. However, 20 percent of the youths spent no time at all in the reading of books.

Adjustment and Learning in School

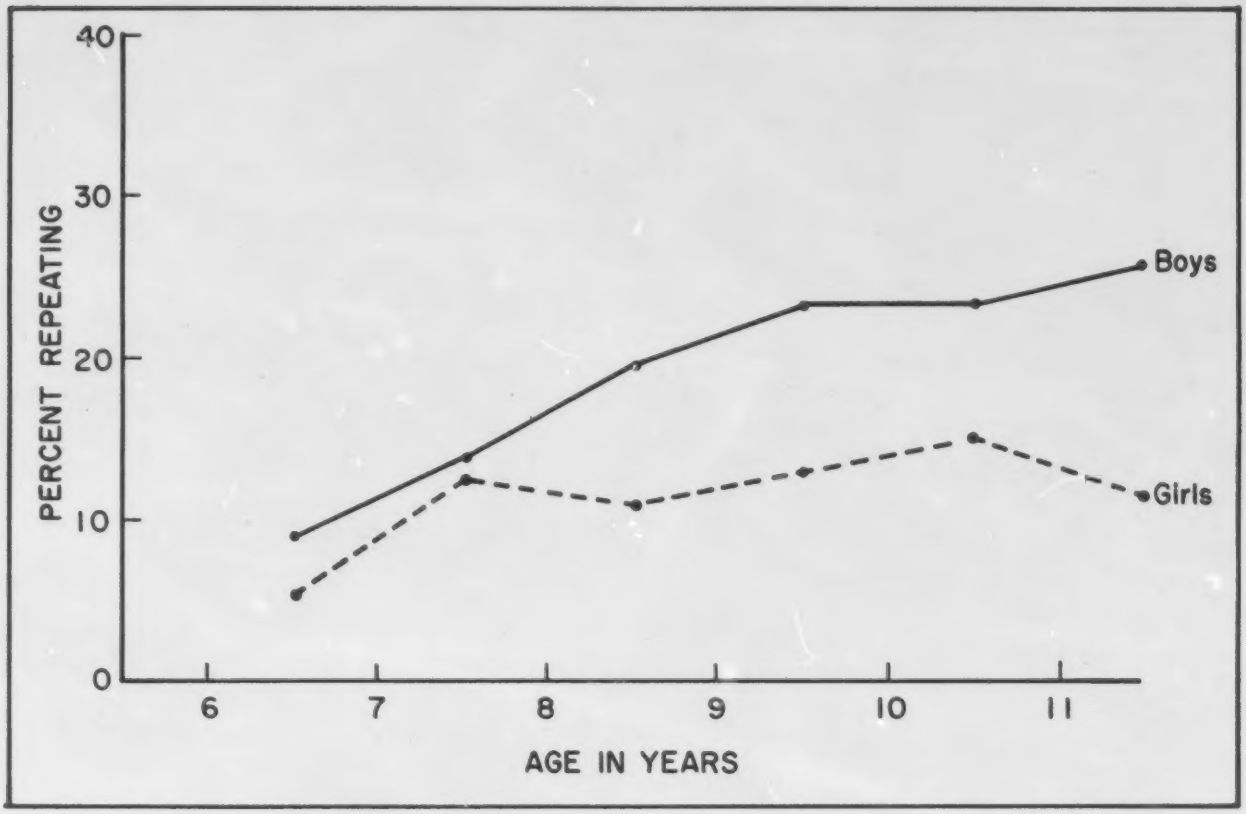
The highlights of the data on the children's school performance indicated serious, nationwide problems in education and learning and were a decided contrast to the parents' description of their children's adjustment and development. The extent of school failure was suggested by the number of children who were retained in grade. Among the 6 to 11-year-olds, 15 percent of the children had been retained one or more years, and in the 12 to 17-year-old sample, 16 percent had repeated at least one grade. The percentage of retentions was much higher for boys than girls. (Figure 6). Among boys 9 percent were retained at age 6, and 26 percent at age 11; among girls 5 percent were retained at age 6, 12 percent at 11. Among both children and youths the most frequent reason for repeating was academic failure, accounting for about half the cases. Other factors such as social immaturity and excess absences, alone or in combination with academic failure, accounted for most of the remainder. (Table 55).

Fig. IV-5. Percent distribution of children and youths by time spent watching television on a usual day (as reported by parents for children and self-reported for youths), United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 108, Figure 7, page 13 and Series 11 - No. 147, Table 21, page 44.

Fig. IV-6. Percent of boys and girls 6-11 years of age who repeated one or more grades in school, by age, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 113, Figure 1, page 2.

In both samples the proportion of children who had skipped grades was very small: less than 1 percent among 6 to 11-year-old children, 1 percent among 12 to 17-year olds. Boys were as likely to have skipped as girls.

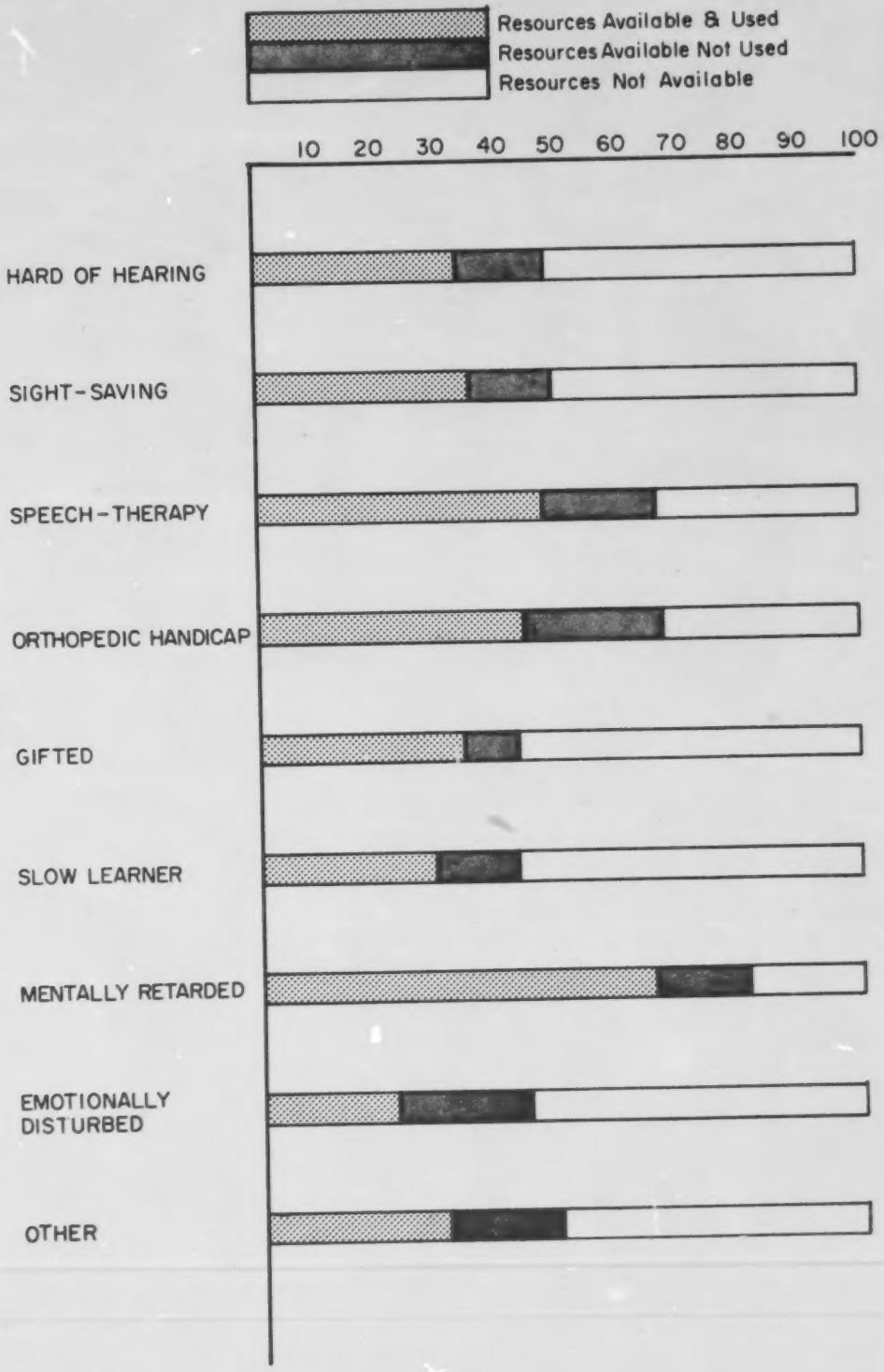
Sizeable unmet needs for special educational services were portrayed in teacher ratings. Teachers rated 30 percent of the 6 to 11-year-old children as needing special educational services. The availability of resources differed depending on the problem, but in general, special services were available for less than half of the children in need. The largest number (13%) who needed special training were the children who did not meet academic expectations and were thought to be slow learners. Such resources were unavailable for 57 percent of this group. The gifted, who constituted a smaller proportion of the sample (5%) did not fare any better -- special resources were unavailable for 57 percent. Six percent of the children needed speech therapy; it was not available for 33 percent; 3 percent were emotionally disturbed, but there were no services for 55 percent. The mentally retarded, who constituted 1 percent of the sample, came closest to having their needs met -- 65 percent were in special programs, 19 percent were without programs. Besides the overall poor availability of services, resources often failed to reach children in need; depending on the specific problem, between 10 percent and 20 percent of the special services went unused. (Figure 7).

Findings for the 12 to 17 age group were not strictly comparable, for among this group teachers reported youths who "need or are currently using" special resources. In the children's cycle teachers were asked to report which children would be recommended for special services if they were available. The smaller numbers, therefore, probably reflect wording rather than educational change. Special resources were recommended for 16 percent of the youths; remedial reading and training for slow learners accounted for about a third of the needs. Programs for the gifted, for the emotionally disturbed, and speech therapy were insufficient for the youths as well as the children. (Table 56).

Teachers' ratings of children's ability contrasted with parents' perceptions. On the parent questionnaire, parents had described only 4 percent of the children as learning more slowly than average during the preschool period. Yet when these same children were rated by their teachers, 17 percent were rated below average in intellectual ability, four times as many as the parental estimate.

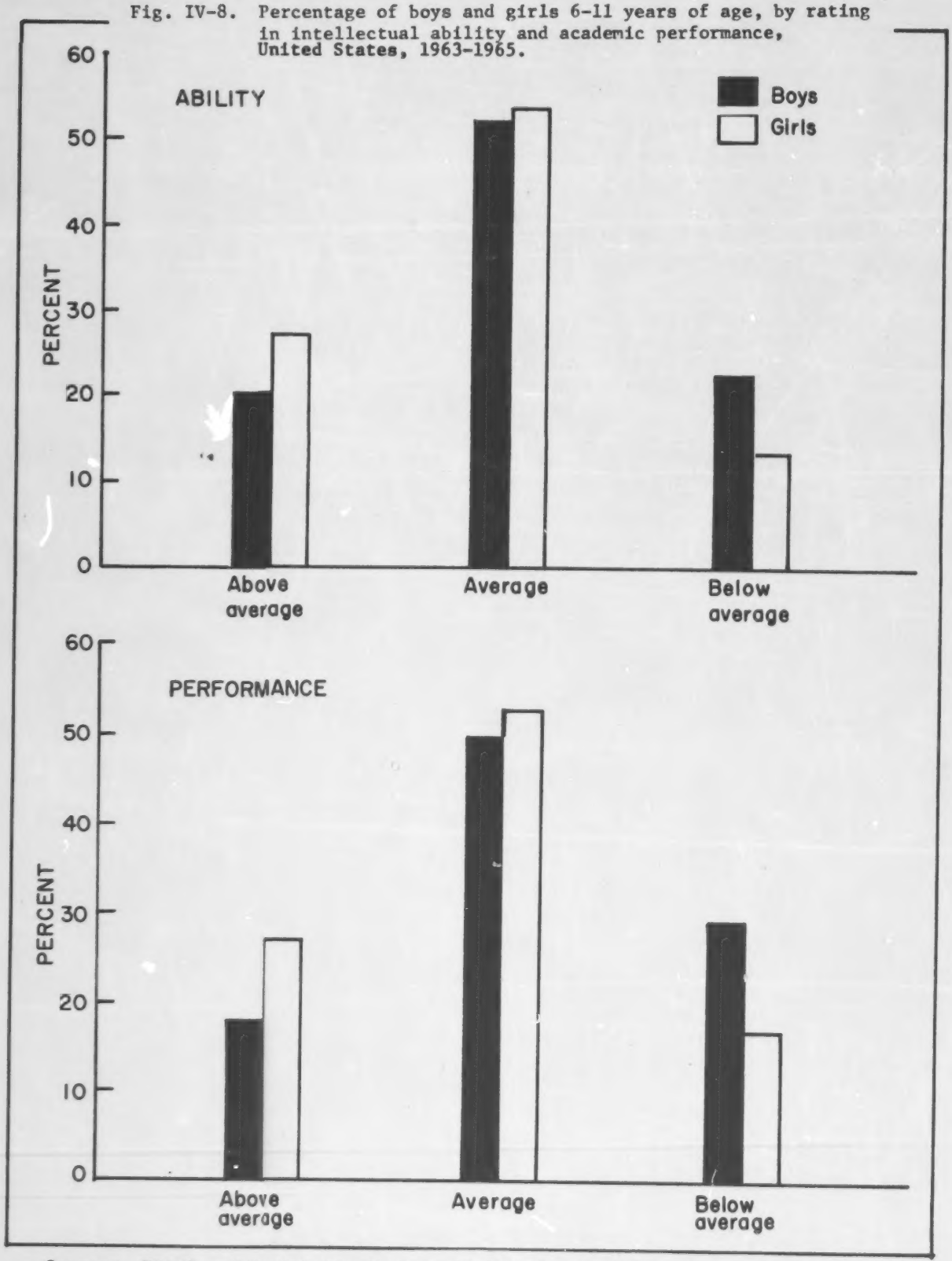
Teachers rated girls higher than boys in both performance and intellectual ability -- 21 percent of the boys and 28 percent of the girls were judged above average in ability, 22 percent of the boys and 14 percent of the girls below average. (Figure 8). These differences persisted among the 12 to 17-year-olds. However, objective tests of

Fig. IV-7. Availability and use of special resources for children 6-11 years old with specific problems, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 113, Table A, page 3.

Fig. IV-8. Percentage of boys and girls 6-11 years of age, by rating in intellectual ability and academic performance, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 113, Figure 2, page 4.

achievement and intelligence gave a contrasting picture. On achievement tests there were few differences between boys and girls, and on the intelligence measure boys performed slightly but consistently better than girls at all age levels.*

The aspects of child behavior rated by teachers were adjustment, attention, motor activity, behavior problems, and frequency of required discipline. Seventeen percent of the children were described as adjustment problems, 14 percent as unusually well adjusted, and 69 percent presented no particular problems. (Table 57). Among 12 to 17-year-olds, three-fourths were rated as well-adjusted and 17 percent as maladjusted to some degree; for the remainder, teachers had insufficient information. In both groups, sex differences were very apparent. Boys were much more likely than girls to show problem behavior; this was true for every aspect of behavior studied and for all age groups. (Figure 9). Among 6 to 11-year-olds, boys twice as often as girls were rated as behavior problems, three times as often as having attention problems or excess motor activity.

One child in five was reported to show aggressive behavior such as fighting, roughness with peers, frequent injuries, or use of bad language. The proportion for boys was 36 percent and for girls 9 percent. Disciplinary action was required by 66 percent of the boys, 42 percent of the girls. (Table 58).

Not surprisingly, those rated above average in ability and performance were usually classified as better behaved. Similarly, better behaved children were typically described as better accepted by peers than their age mates with behavior problems.

On the youth questionnaire, the youths themselves reflected on their schooling and their scholastic aspirations. Ninety-six percent of the 12 to 17-year-olds reported that they were enrolled in school. Almost all (99%) wanted to finish high school, and most hoped to continue some form of education later. A very small group (2% of the 15-year-olds and 1% of the 16 to 17-year-olds) expressed the wish to quit school as soon as possible.

Girls were more likely to hope for obtaining "some college or other training after high school"; boys were more likely to hope for "getting a college degree" or "finishing college and taking further training."

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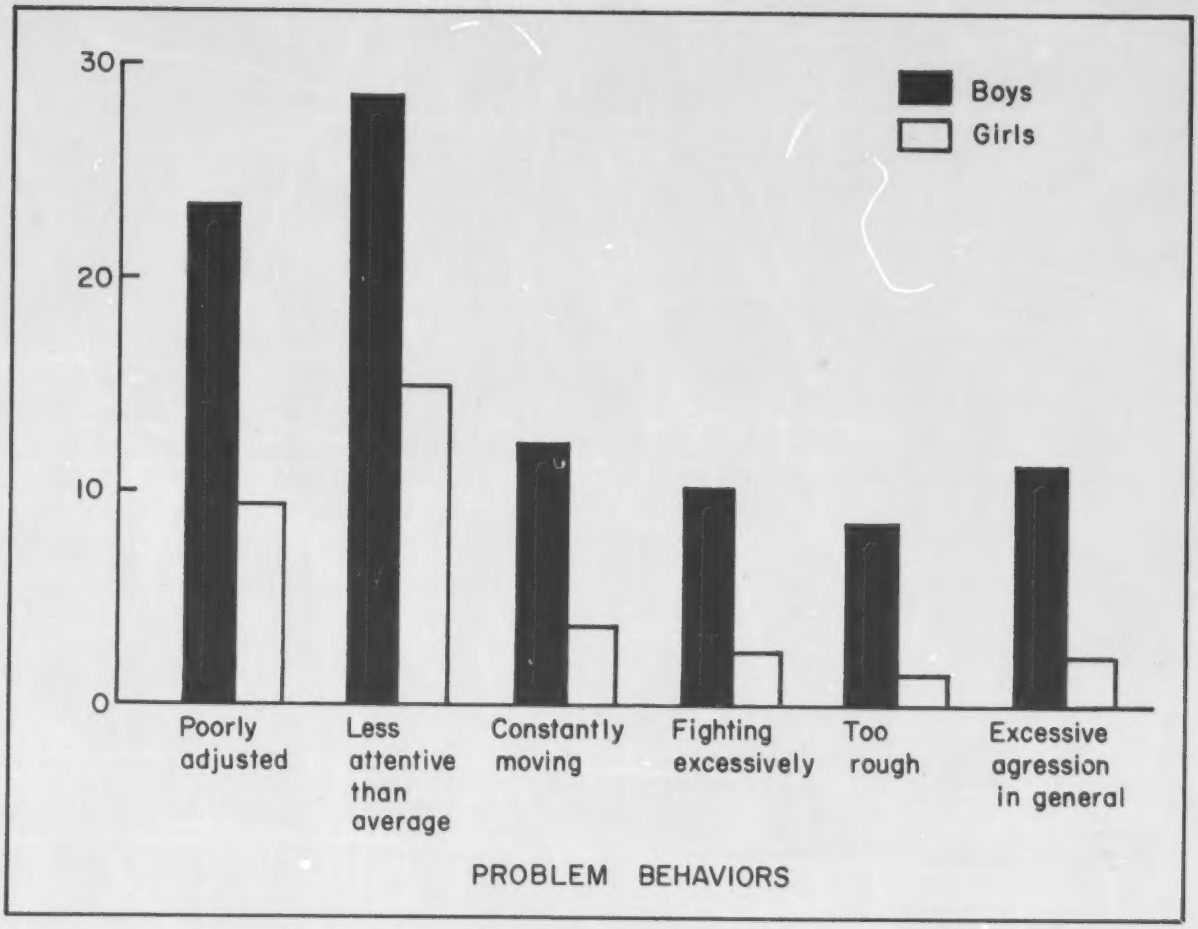
*In the main, teacher ratings appeared to be reliable. For example, among 12 to 17-year-olds, teacher ratings of academic performance were compared to achievement test scores and found to agree quite closely. Within this general agreement, however, it is possible that there are selective tendencies when comparing the sexes.

Fig. IV-9. Proportion of boys and girls 6-11 years of age exhibiting the more frequent types of problem behavior in school by type of problem, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 113, Figure 5, page 6.

Of the small number of high school dropouts, 48 percent wanted to finish high school, and 15 percent had higher educational aspirations; 37 percent wanted to stay out of school.

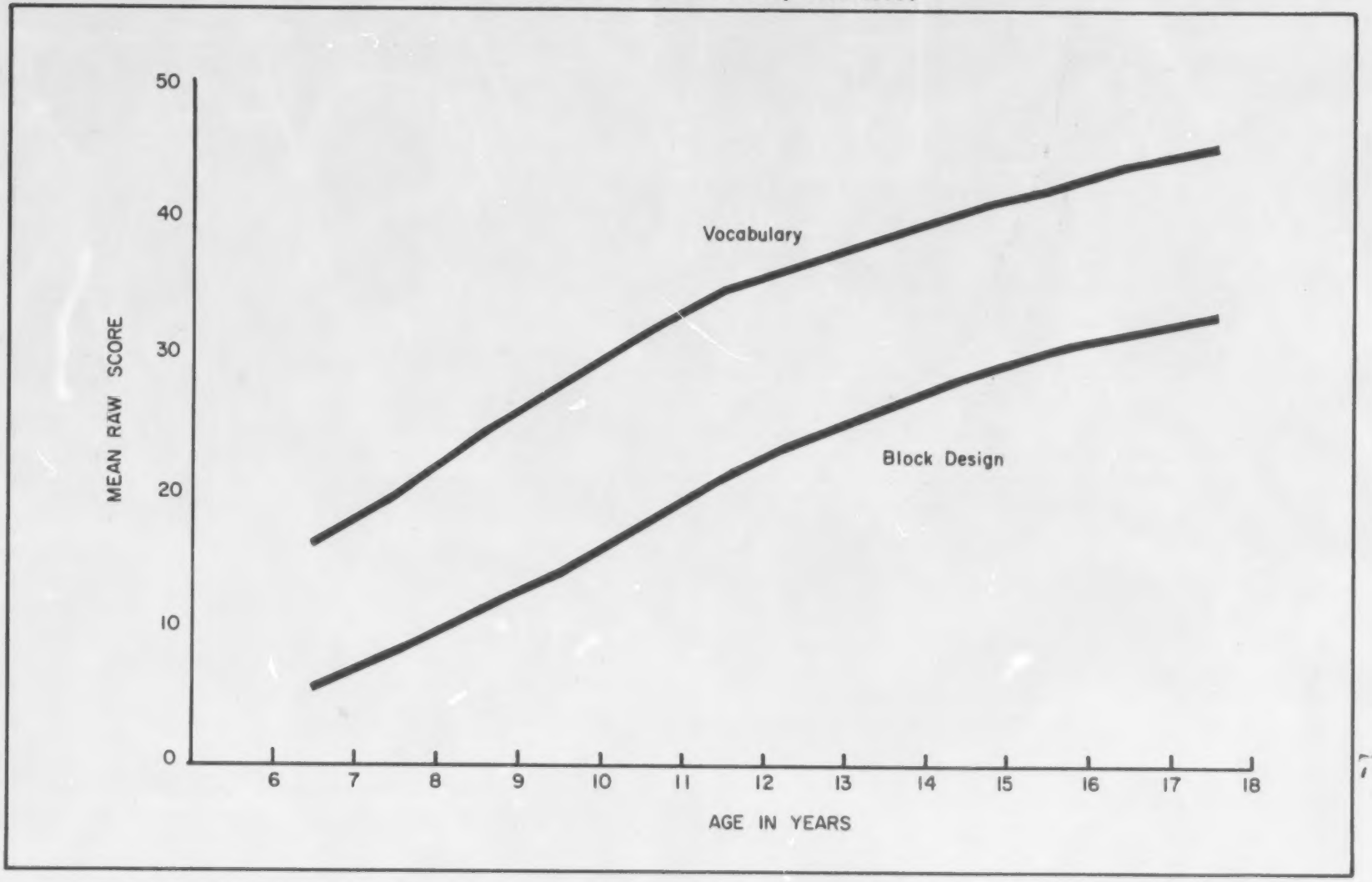
Intellectual Development

Over 12,000 children and youths were tested with the Vocabulary and Block Design subtests of the Wechsler Intelligence Scale for Children (WISC), a sample five times larger than the original standardization sample and much more broadly representative of the national population of children and youth. The children showed a steady rise in intellectual ability from year to year through elementary school age; at age 12 the rate of growth began to slow, but continued steadily in small increments to age 17, the top age studied. (Figure 10) Similarly, with drawings of the human figure, children's ability to elaborate and articulate showed large, steady increases each year to age 12 or 13, then small increments to age 16. (Figure 11). There was no developmental spurt on either test to correspond to the physical growth spurt typically seen at the onset of puberty.

For many years, and in many studies, a relationship has been demonstrated between intelligence test scores and the environment of the growing child. The tests used in this study, like all others, are in no sense culture-free, and performance reflects not only innate potential but the powerful shaping factors surrounding the child--the parents' education, the quality of his own, and the cognitive stimulation or lack of it available in the total environment. To an unknown degree, the tests are biased against some groups because of relative lack of critical experiences with the type of language or ideas emphasized by the test. The fact that black children's scores on some tests were poorer than whites is continuing testimony to the differences in experience and opportunity available to black and white children in the United States.

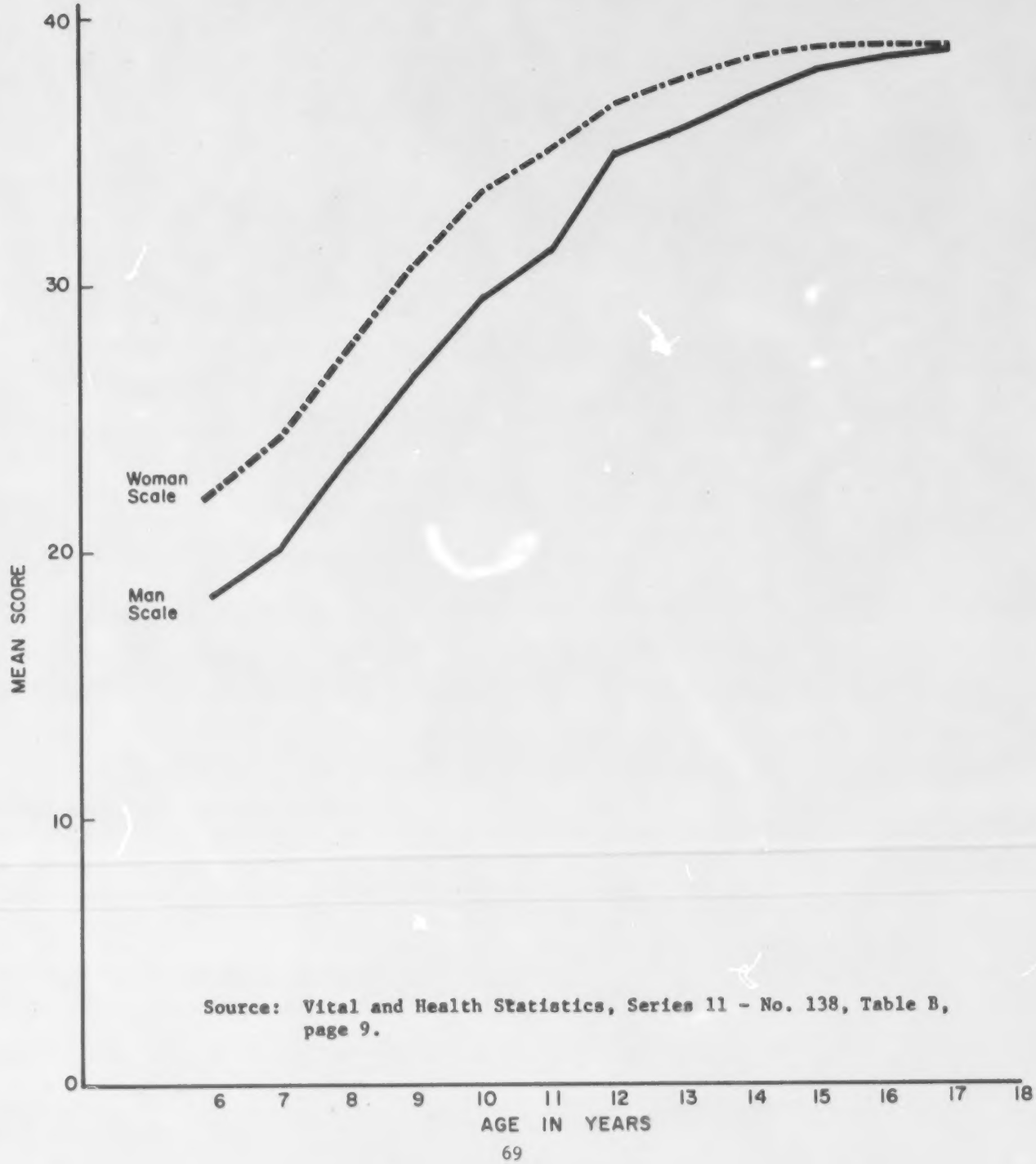
The variables associated with performance on the intelligence measures were: 1) parental education (a positive association between years of parental education and children's scores); 2) family income (high income children scored better); 3) race (white children did better than other-than-whites); 4) region (Southern children had lower scores than others); and 5) place of residence (those from areas of rising population did better than those living where population was declining). The extent of these relationships varied from test to test and from factor to factor. The variable that seemed to be of greatest continuing importance across all tests was parental education; family income was also important but to a lesser degree. Racial differences were apparent on the WISC but less so on the human figure drawings, a measure less dependent on verbal stimulation and educational experience. The advantage shown by children in areas of rising population may support the idea of selective migration, at least during the period of this study, a time when large segments of the U.S. population were on the move. (Tables 59-64, Figure 12).

Fig. IV-10. Mean raw scores on the Vocabulary and Block Design subtests of the WISC by age: Cycles II and III of the Health Examination Survey, United States, 1963-1970.



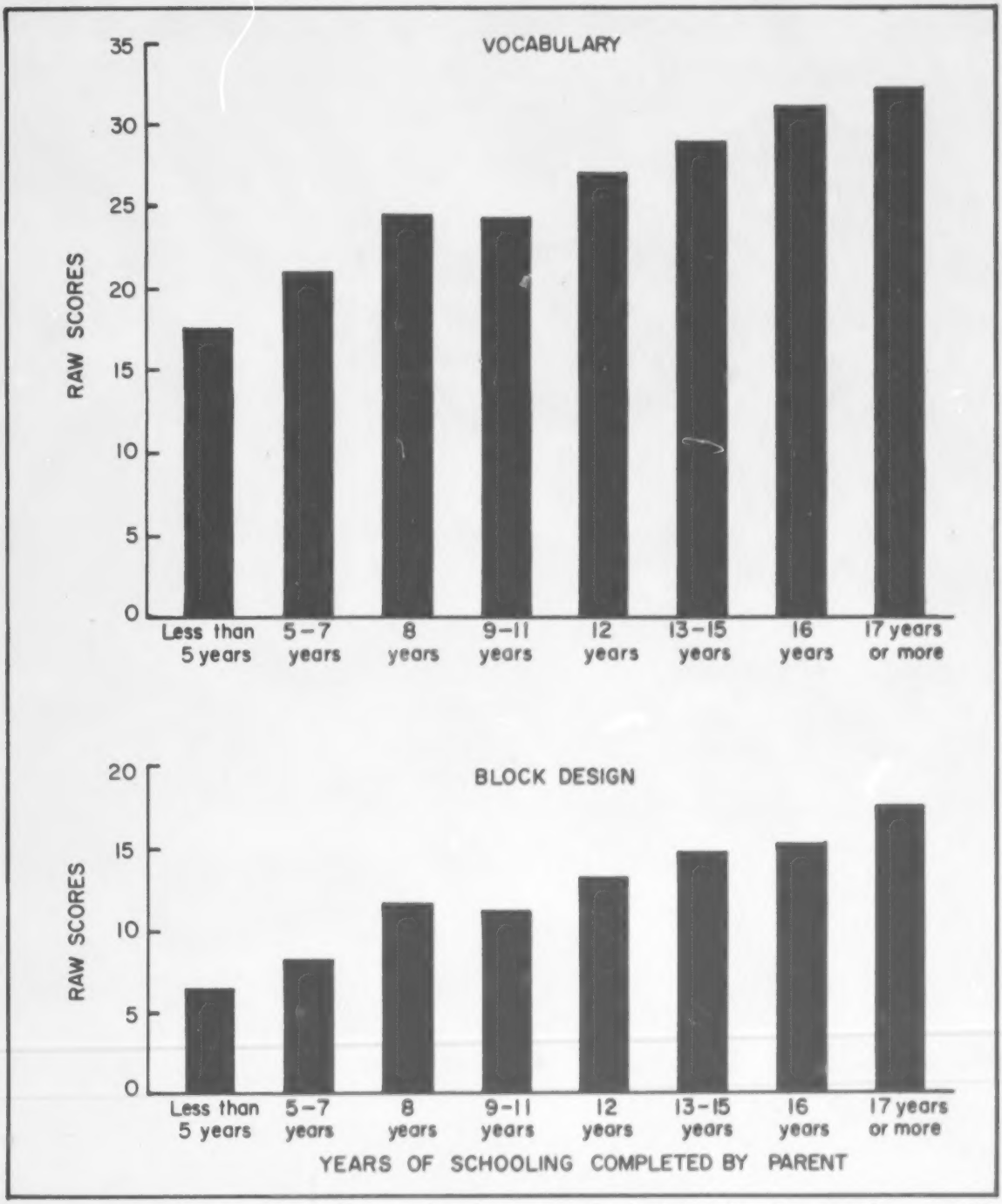
Source: Vital and Health Statistics, Series 11 - No. 128, Figure 9, page 17.

Fig. IV-11. Mean scores on the man and woman scales of the Goodenough-Harris Drawing Test, United States, 1963-1970.



Source: Vital and Health Statistics, Series 11 - No. 138, Table B, page 9.

Fig. IV-12. Average Vocabulary and Block Design raw scores on the WISC for children by education of parents, United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 110, Figure 13, page 17.

Sex differences in intelligence test scores consistently favored boys. The differences were small, but significant at practically all ages from 6 through 17, and were unaffected by region, race, or any other environmental factors considered. Similar findings had been reported in earlier studies with the WISC and Stanford-Binet tests, but the differences had been attributed to effects of sampling. That explanation does not appear tenable in the present study, and the differences appear to be real.

A number of other environmental and developmental variables were studied in relation to intelligence test scores. For example, among the 6 to 11-year-olds, children of foreign-born mothers generally did as well as children of native-born parentage, except that the younger children of the foreign-born scored lower on the WISC vocabulary subtest. (Figure 13). There was a tendency for children with fewer siblings to score higher than those from larger families. (Figure 14). Also, there was a relationship between IQ and birth weight -- children born between 5 and 10 pounds scored higher than those below 5 or over 10 pounds. (Table 65, Figure 15). Children whose walking or speech was delayed beyond 18 months, scored significantly lower on the intelligence tests. Finally, children with pre-school educational experience--kindergarten or nursery school--showed a significant advantage on the intelligence tests over those children without pre-school experience.

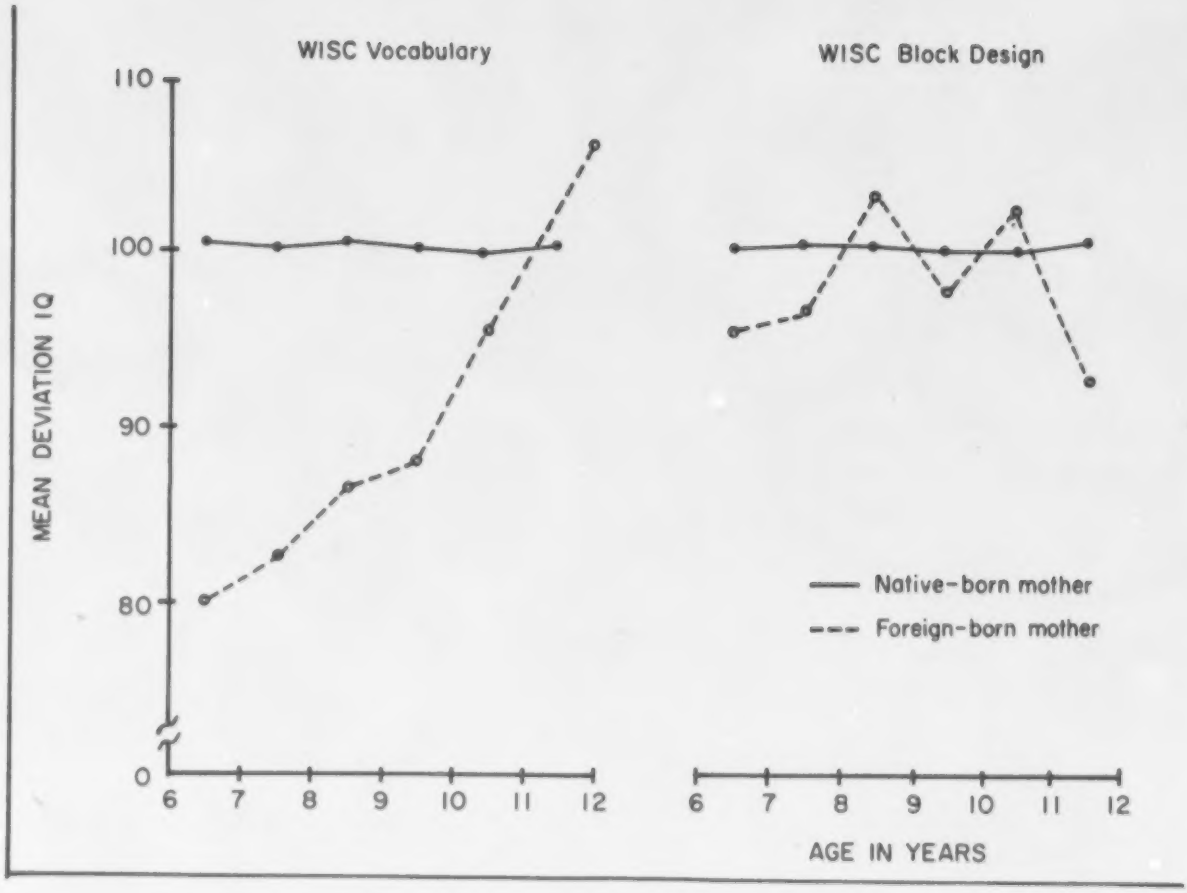
Academic Achievement

Estimates of academic achievement were based on the reading and arithmetic subtests of the Wide Range Achievement Test and, among 12 to 17-year-olds, a Brief Test of Literacy. The Brief Test of Literacy was intended for use with adolescents and adults; it taps both reading and writing skills. The definition of literacy used in constructing and scoring the test was achievement of at least beginning fourth grade level.

Scores on the reading and arithmetic tests showed expected gradual increases from year to year throughout the age span tested. (Figures 16 and 17). Growth from year to year was slower for youths than children, especially for arithmetic where yearly increments were slight and stopped altogether by age 16.

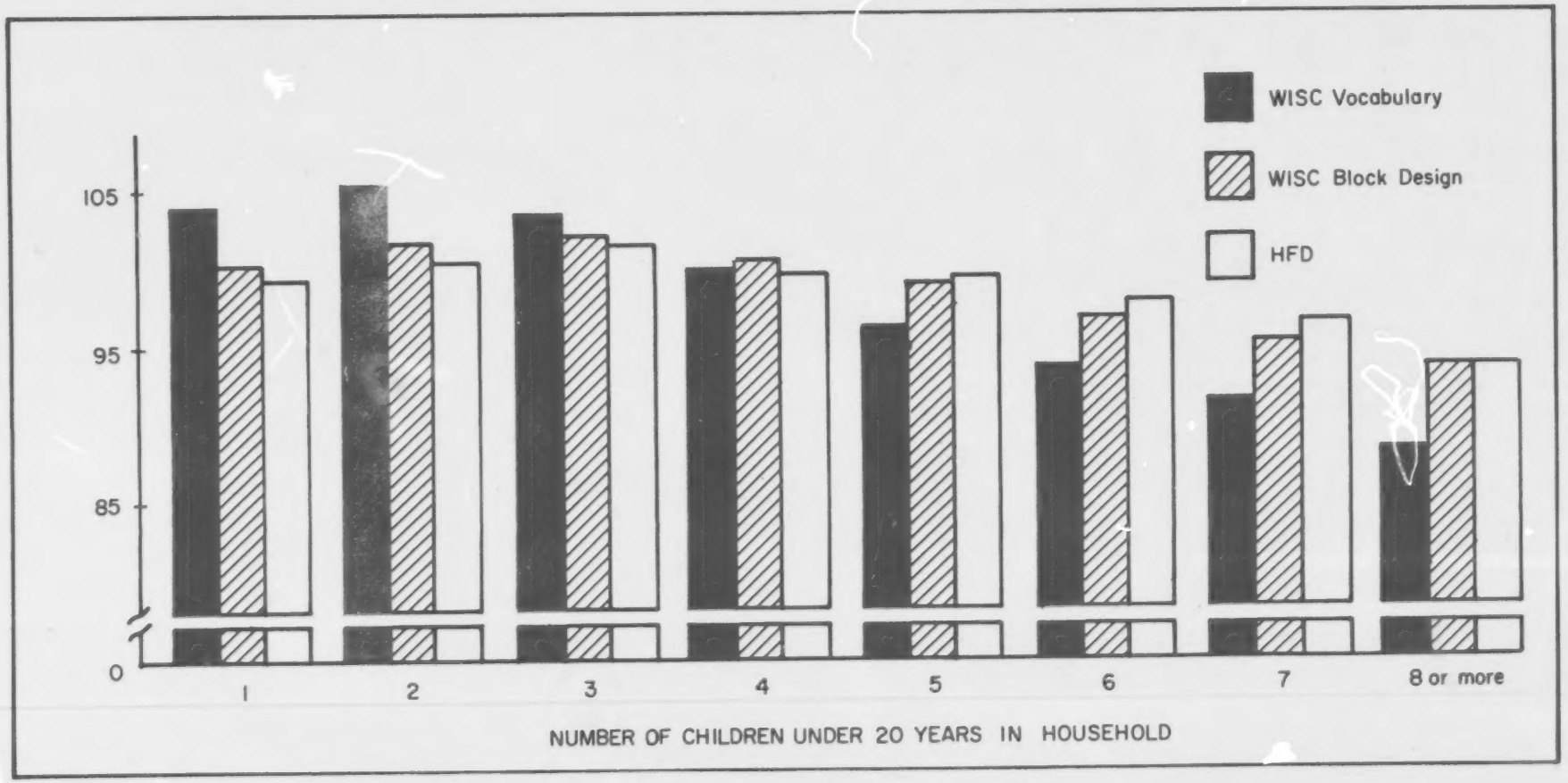
Demographic and socioeconomic factors showed similar patterns of differences between groups with achievement measures as with the intelligence measures. On the average, children from the South scored lower than those from other regions; children from urban areas outscored those from rural areas; those living in areas of rising population rated higher than those in areas of decline. The two most influential socioeconomic factors related to achievement were parental education and income. Of the two, education of the parents was more highly correlated with achievement than family income. (Tables 66-70, Figures 18 and 19). Both factors were more highly correlated with

Fig. IV-13. Mean deviation IQ on the WISC Vocabulary and Block Design for children 6-11 years by place of birth of mother and age of child, United States, 1963-1965.



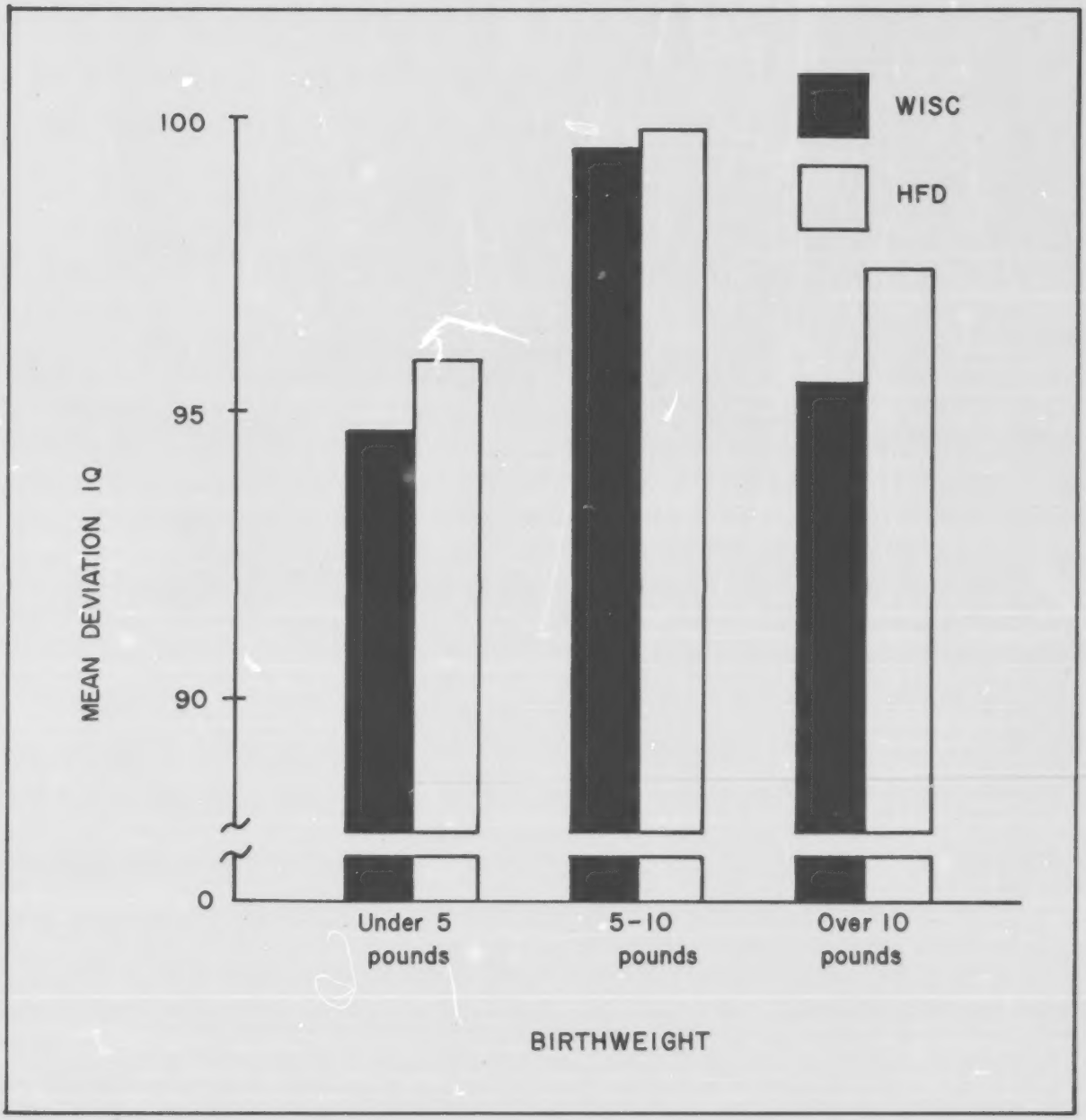
Source: Vital and Health Statistics, Series 11 - No. 142, Figure 2, page 6.

Fig. IV-14. Mean deviation IQ on the WISC Vocabulary and Block Design and the modified Human Figure Drawing (HFD) tests for children 6-11 years, by number of children under 20 in the household, United States, 1963-1965.



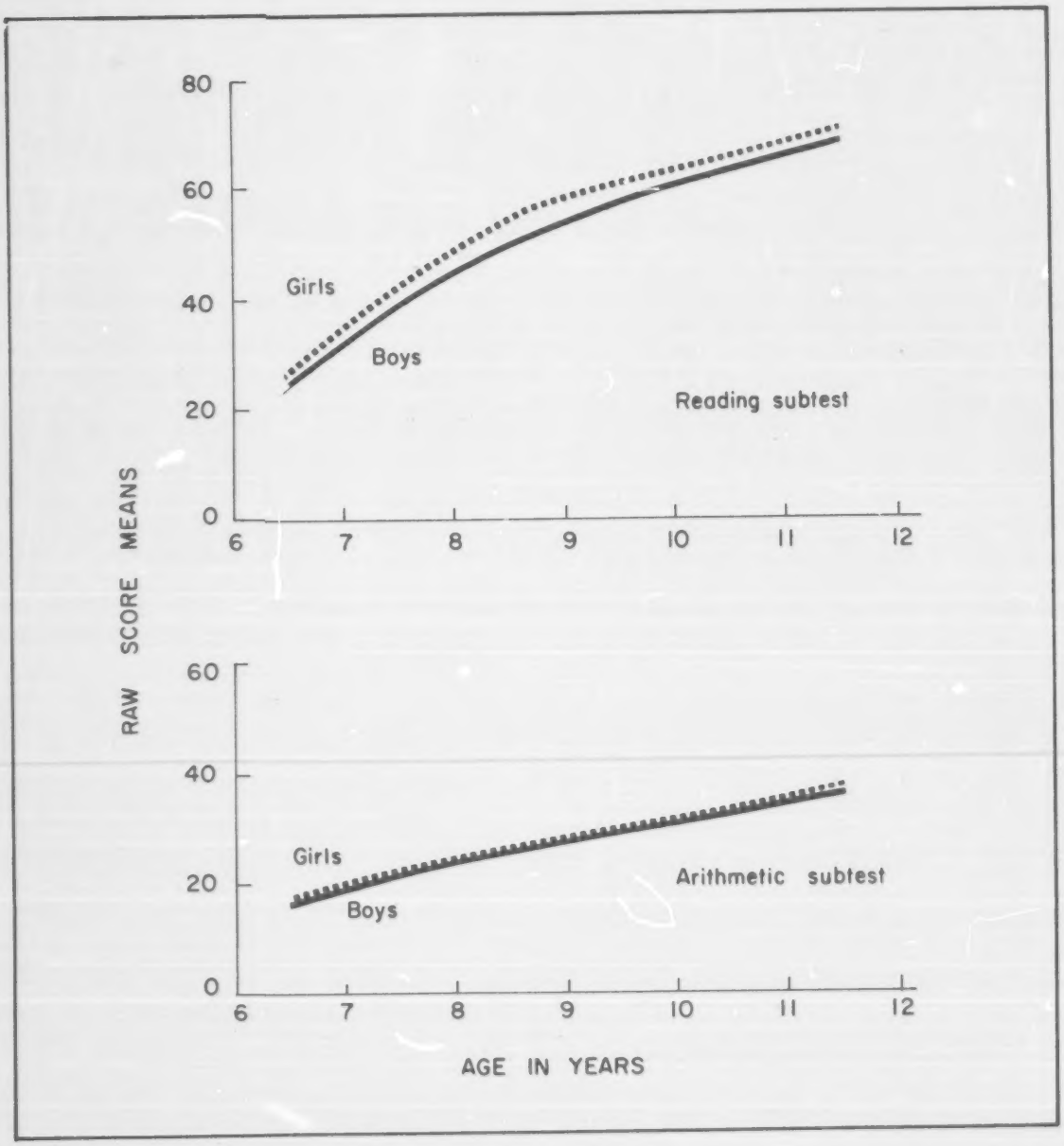
Source: Vital and Health Statistics, Series 11 - No. 142, Figure 4, page 7.

Fig. IV-15. Mean deviation IQ on the short form of the WISC and modified Human Figure Drawing (HFD) tests for children 6-11 years of age, by weight at birth, United States, 1963-1965.



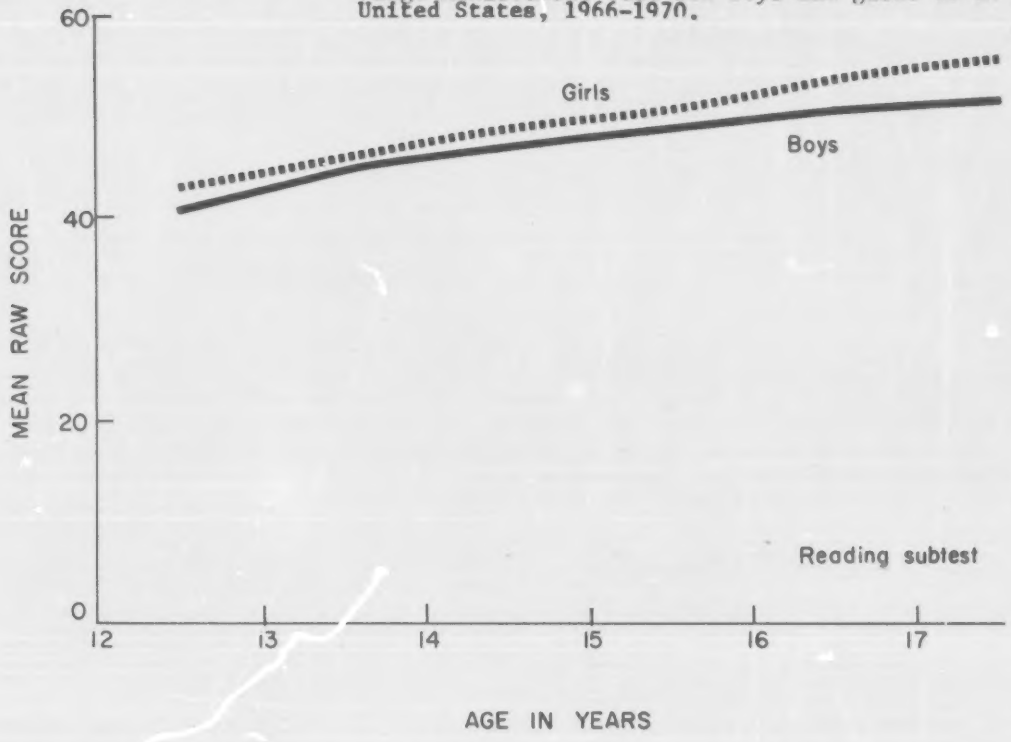
Source: Vital and Health Statistics, Series 11 - No. 142, Figure 5, page 9.

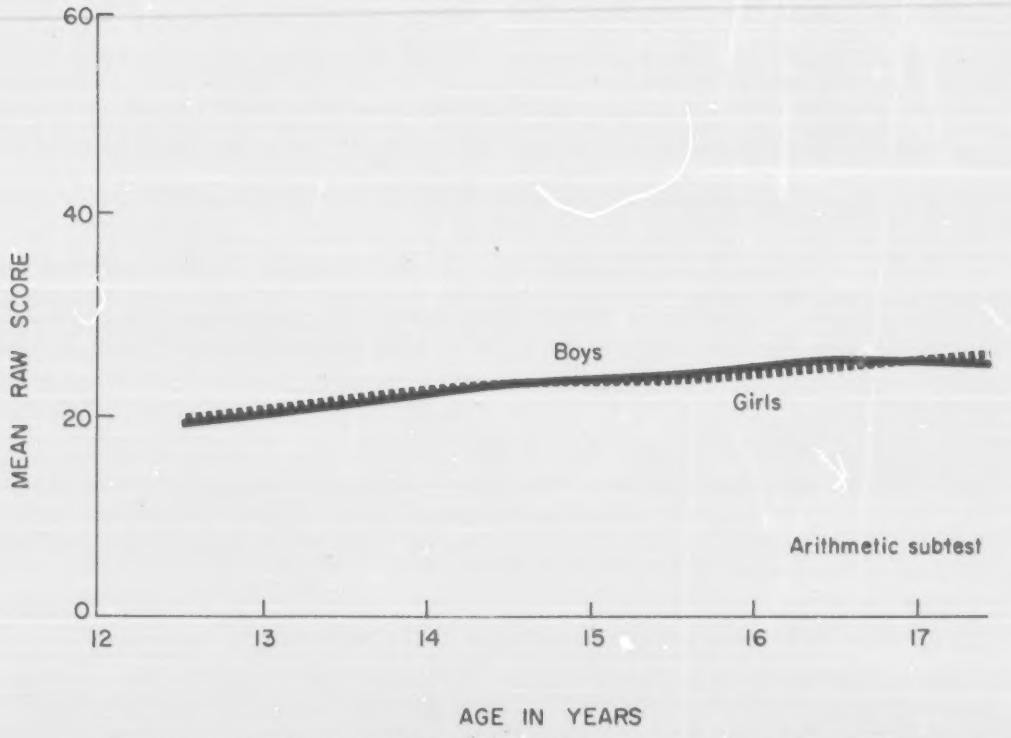
Fig. IV-16. Mean raw scores on the Reading and Arithmetic subtests of the Wide Range Achievement Test for boys and girls, 6-11 years, by age: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 103, Figure 2, page 6.

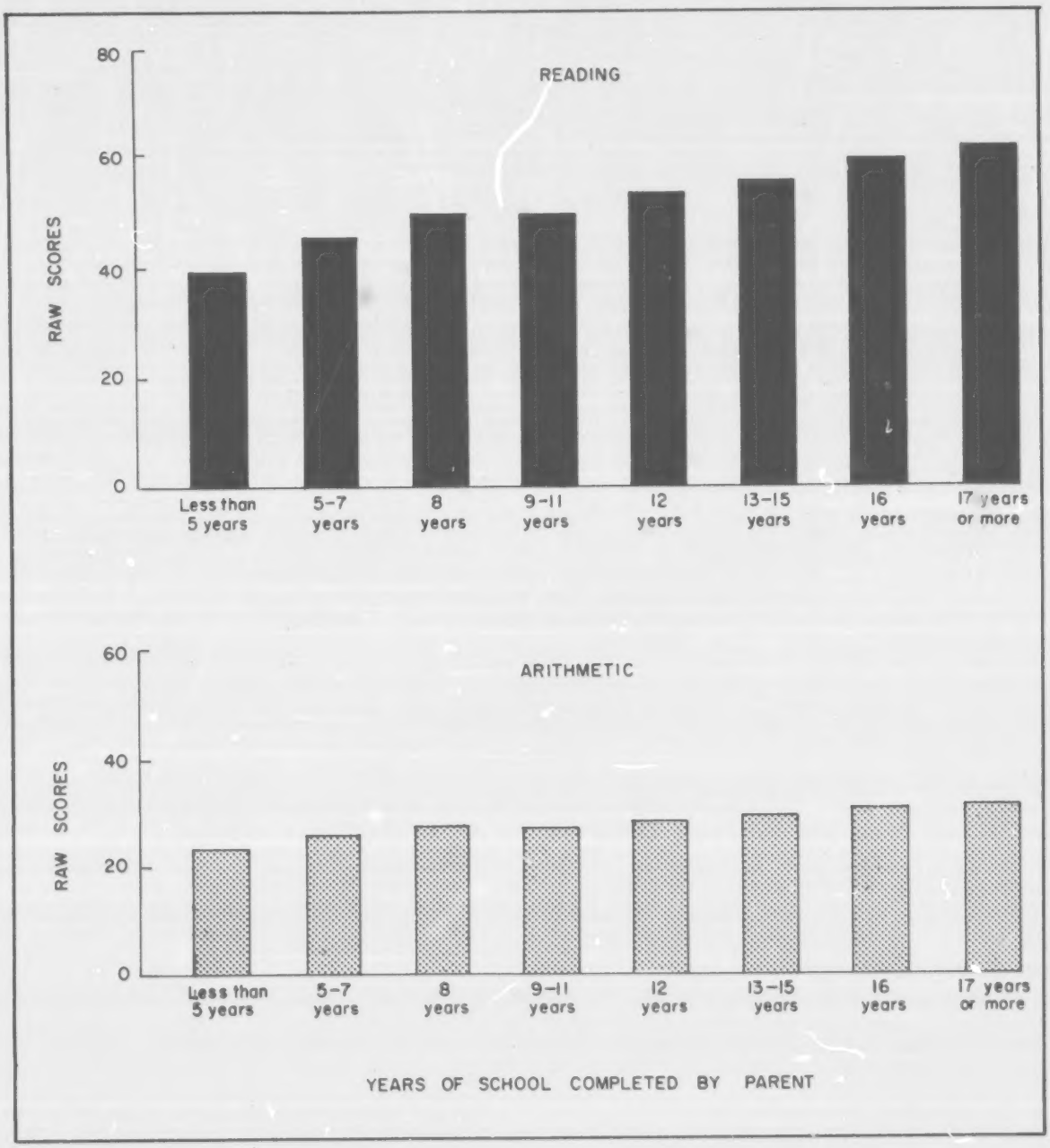
Fig. IV-17. Mean raw scores on the Reading and Arithmetic subtests of the Wide Range Achievement Test for boys and girls 12-17 years, by age, United States, 1966-1970.





Source: Vital and Health Statistics, Series 11 - No. 136, Figure 3, page 7.

Fig. IV-18. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by education of parent: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 109, Figure 14, page 18.

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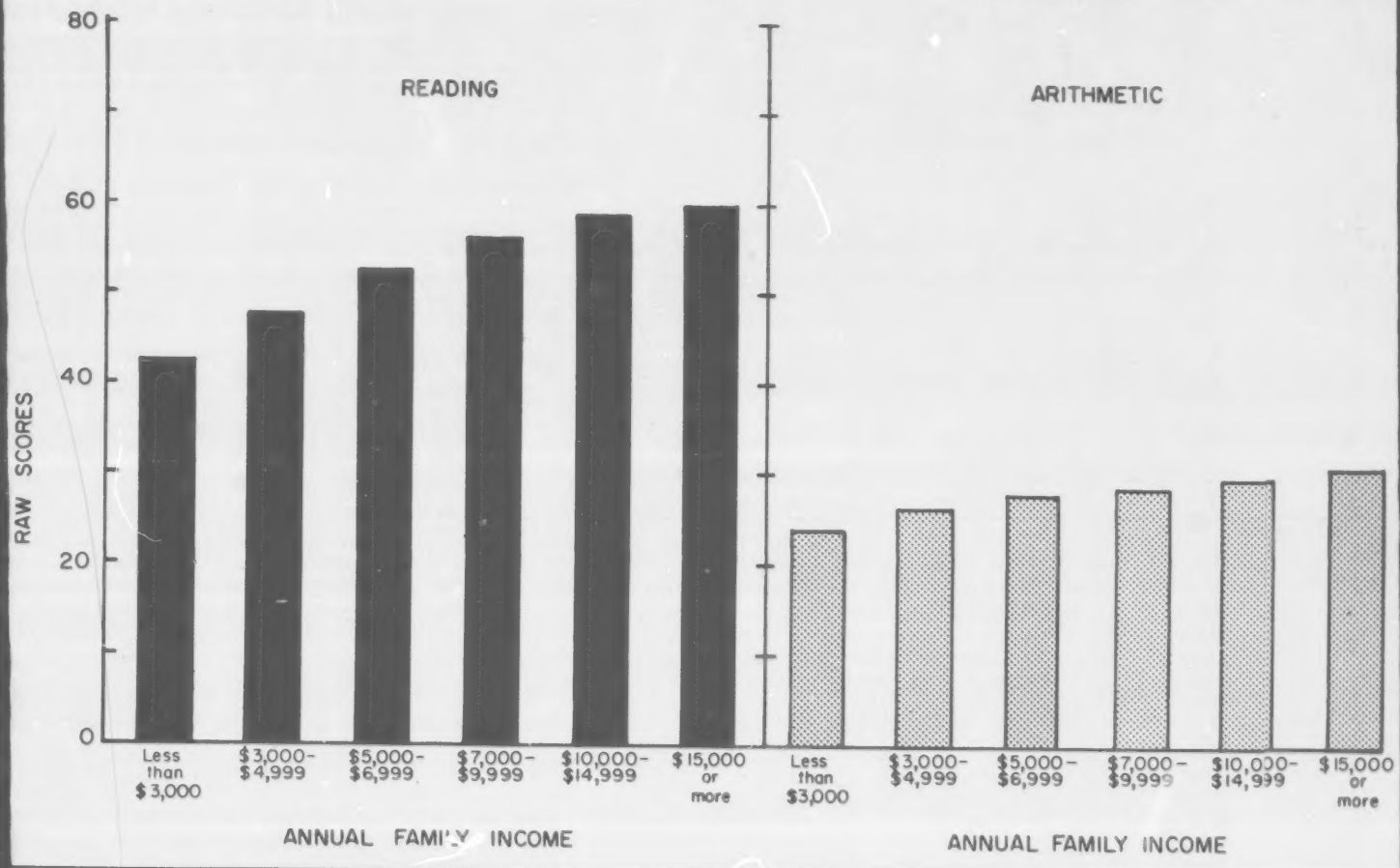
Fig. IV-19. Average Reading and Arithmetic raw scores on the Wide Range Achievement Test for children by annual family income: United States, 1963-1965.



Source: Vital and Health Statistics, Series 11 - No. 109, Figure 11, page 15.

achievement than was race, although white children did surpass blacks in reading and arithmetic scores. (Table 71). Findings from the 1965 Coleman Study of Equality of Educational Opportunity were remarkably similar in respect to the performance of black and white children. (Table A). It is unfortunate that these studies did not attempt comparisons of achievement between children of integrated and segregated classrooms.

When data were examined separately for children in special education classes (both for physically and mentally handicapped), black children tended to score higher than whites. Owing to small sample sizes, these differences were not statistically significant, and the data do not indicate whether there may be a greater tendency to assign black children to special classes as has sometimes been asserted.

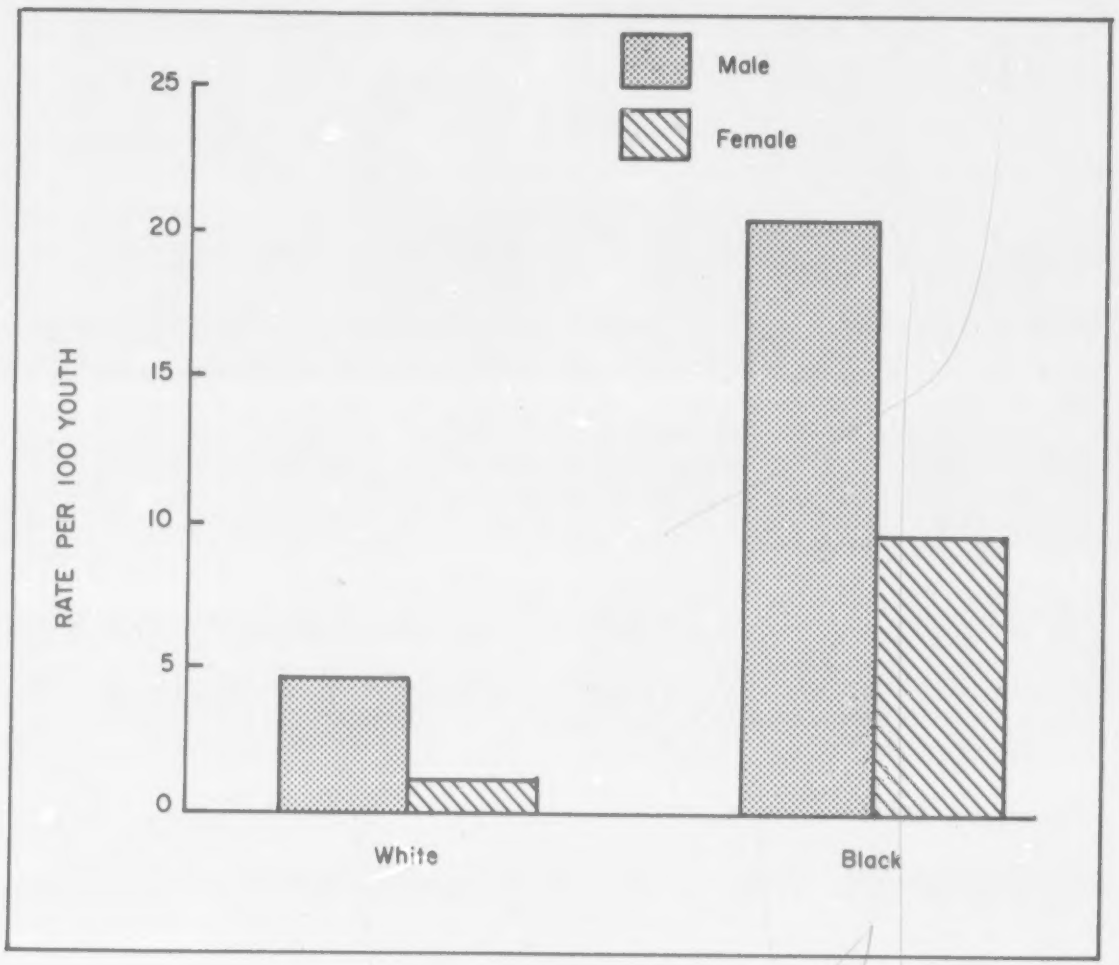
Five percent of the youth tested were found to be illiterate, that is, unable to read at beginning fourth grade level. Projecting to the national population from this sample, an estimated 1 million teenagers would be classified as illiterate. Significantly more boys (7%) than girls (3%) were found to be illiterate. (Figure 20). Among white youths, the rate declined somewhat with age (overall, 3%), but among blacks it remained high at 17 years of age (overall, 15%). In general, higher levels of illiteracy were associated with lower parental education and lower family income. The geographic factor again was important -- there was more illiteracy in the South than elsewhere. Also, illiteracy occurred more often in families with more than six children.

Table A. Average standard score equivalents in Reading and Arithmetic for third and sixth-grade pupils in the Coleman study and for the United States in the present study, by race*

Subject and grade	White		Black	
	United States 1963-65	Coleman 1965	United States 1963-65	Coleman 1965
	Standard score			
Reading				
Third grade----------	103	104	89	91
Sixth grade----------	103	106	93	91
Arithmetic				
Third grade----------	103	104	96	92
Sixth grade----------	104	104	93	89

*From Vital and Health Statistics, Series 11, No. 109, p.25

Fig. IV-20. Illiteracy rates by sex and race: United States, 1966-1970.



Source: Vital and Health Statistics, Series 11 - No. 131, Figure 3, page 4.

These findings are in contrast to Census Bureau data in which much lower illiteracy rates were reported (U.S. Bureau of the Census, 1971). The Census Bureau defined literacy as completion of the sixth grade; a definition based on performance, as in these studies, obviously is a more accurate indicator of the magnitude of the problem.

Summary

Inevitably, this highly condensed and selective presentation of the highlights of the psychological evaluation precludes detailed interpretations.

An overall positive view of the children's adjustment, development and abilities was derived from the parents' responses to global questions. The parents also conveyed a picture of a rather close-knit family as suggested by the number of meals eaten jointly, the number of friends known to the parents; and the relatively little time that children and even youths spend away from home when their whereabouts were unknown.

The more specific questions directed to parents as well as the youths' self-reports raise some troubling issues -- the persistence of enuresis; the prevalance of sleep disturbance, tension and self-reported anxiety; the numbers who have had mental health services and many more who may possibly need it.

The school data also offered a troubling picture. There was a large number of school failures, more in elementary than in high school, perhaps because many left school altogether in the upper grades. Available special services for gifted and handicapped children met a fraction of the need. The discrepancies between the parents' and teachers' impressions of the children must have consequences in poor understanding between home and school, particularly when children experienced school failure or teachers recommended special remedial service as was true for a substantial portion of the sample. The sex differences in behavior and learning reported suggest that for a sizeable minority of boys, school was not a successful setting.

Both intellectual functioning and achievement showed the close association with parental education and family income demonstrated in other studies. Racial, regional and urban-rural differences in intelligence and achievement were less marked and consistent, although in general, these attested to the inequities in experience and opportunity available to American children and youths.

There are other issues of concern from the public health and program-planning point-of-view -- the high rates of illiteracy among youths, the importance of television as a major leisure pastime throughout childhood and adolescence; the lack of preschool experience for many children in view of its apparent relationship to subsequent learning.

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V. THE NUTRITIONAL SURVEYS

This chapter reviews three nutritional surveys, each initiated in response to concern at the Federal level over the nutritional status of the United States population. The differences in sample design and composition, and in techniques and standards for evaluating nutritional status, preclude the integration of findings. Nonetheless, there is sufficient overlap in subject matter to include the three surveys in a single chapter.

A. Preliminary Findings of the First Health and Nutrition Examination Survey United States, 1971-1972

The Health and Nutrition Examination Survey (HANES), established under the authority of the National Health Survey Act of 1956, measures the nutritional status of the American people, monitors any changes that may occur in that status and improves the basis for allocating scarce program resources.

The HANES began data collection in April 1971 for a probability sample in the broad age range of 1 to 74 years. Household visits, interviews and orientation to the examination were handled by field teams which included professional and paraprofessional medical and dental examiners, technicians and interviewers. Those for whom an appointment could be made were examined in mobile centers conveniently located in each of the 65 sampling areas.

The measurements to assess nutritional status were chosen to detect both overt signs and symptoms of malnutrition, and early "risk" signals. These included: information on dietary intake (kind and quantity of food consumed and its nutritional value); biochemical tests to determine the levels of various nutrients; clinical examinations by physicians and dentists to identify signs or conditions indicative of nutritional problems; and body measurements to detect abnormal growth patterns and obesity. The preliminary report is limited to dietary intake and biochemical findings for somewhat over 10,000 people from 35 of the 65 sampling areas.[1]

For each participant in the survey, race was recorded as white, black or other: income status was recorded as below poverty level or at or above poverty level, as determined by the Social Security

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[1]Over 14,000 persons were selected to be examined at these 35 locations between April 1971 and October 1972. Despite intensive efforts, the program succeeded in examining 10,126 or 73%. All earlier Health Examination Surveys achieved higher levels of response and the 73% failed to meet fully the requirements of the original probability design. Subsequently, a policy of remuneration of participants was adopted and resulted in a significant increase in participation.

Administration (1969). This level is a function of family size, composition and place of residence; for a typical family of four with male head and non-farm residence, a weighted average threshold is $4,139. The information relating to children is excerpted from the preliminary report. It is based on the examination of 3,601 children and youths divided into three age groupings: 1 to 5, 6 to 11, and 12 to 17 years. Approximately one-third of the children were black, two-thirds were white. One-third of their families were below the poverty level and two-thirds were at or above the poverty level. (See Table A for age, race and income breakdowns of the children and youth sample.)

Table A. Age, Race and Income Level of Children and Youth Sample

	White		Black	
	Below poverty	Above poverty	Below poverty	Above poverty
1-5 yrs.	180	791	265	208
6-11 yrs.	133	587	177	131
12-17 yrs.	93	582	168	143
Total*	406	1,960	610	482

*The total in Table A is 143 short of the 3,601 children and youths who participated in the first phase of HANES. Excluded from the table are the 1% of other races and all those for whom income level of the family was unknown.

Dietary Intake

Dietary interviews were conducted to obtain information about total food and drink consumption during the day preceding the examination. The parent or other adult responsible for the child's feeding provided information about preschool children and usually both the parent and child were interviewed for those aged 6 to 12. The preliminary HANES report gave results for intakes of calories and selected nutrients[2] including protein, calcium, iron, vitamins A and C.

There was a direct relationship between family income and mean intake of calories, protein and calcium. Black and white children of all ages from families with incomes above the poverty level had higher mean intakes of these three nutrients than their low-income peers. (Table 72)

Regardless of income level, white children in each age group had higher mean intakes of calories, protein and calcium than black children. The only exception was black children 12 to 17 years of age from families above the poverty level who had slightly higher caloric intakes than white children of the same age from families below the poverty level.

[2]Specific nutrients of which biochemical measurements can detect either low or high values of deficient or excess intake.

Mean iron intake was higher among white children of all ages than among black children. The racial difference was not consistent when comparisons were made for the two income groups.

Among preschool children, mean vitamin A intake was higher among black children than white children. However, among school-age children the reverse was true and vitamin A intakes were higher for whites.

Mean intake of vitamin C was highest among white children from families above the poverty level and lowest among white children from families below the poverty level. Black children in both income groups and of all ages had higher vitamin C intakes than poor white children but lower intakes than white children above poverty level.

Mean intake of nutrients per 1,000 calories was used as a measure of the quality of the diet; since it depends on food choices rather than on total food intake. There was less variability between the race and income groups in the nutritional quality of the diet than in total intake of protein, calcium and iron, which suggests that deficiencies of nutrients were related to insufficiency of food. Vitamin A and C intakes per 1,000 calories were highest among black children in families below the poverty level; the higher intake of these nutrients seemed to be related to choice of food rather than to total caloric intake. (Table 73)

The survey also provided information on the proportion of subjects with deficient intakes[3] of selected nutrients. For the children and youth sample, this information is available only for 1- to 5-year-olds. (Table 74, Figure 1).

Among children 1 to 5 years of age, there was a relationship between family income and deficiencies of calories, calcium and vitamin A.

A higher percentage of black children in this age group from families above and below the poverty level were deficient in caloric and calcium intake. For example, 20 percent of black children from families above the poverty level had deficient caloric intake compared to 16 percent of white children from families below the poverty level.

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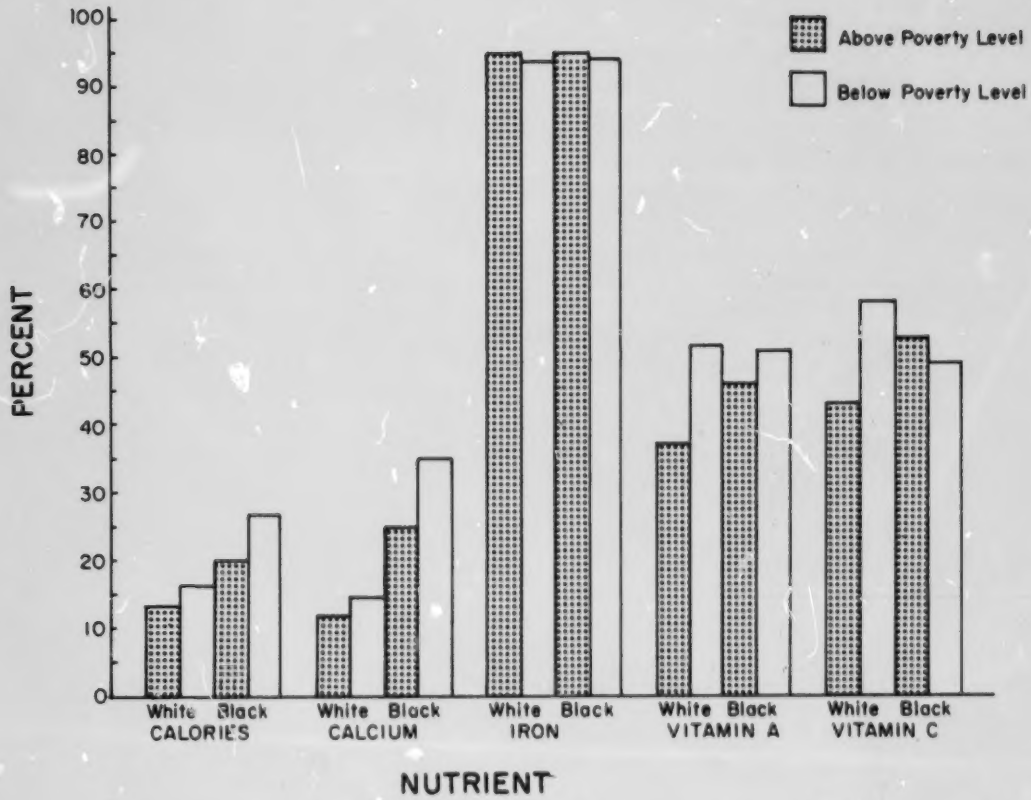
[3]Deficient intakes were based on standards of desirable intakes developed with advice from an ad hoc advisory group.

Fig. V-1. Percent of 1-5 year old children with deficient intake of selected nutrients by race and family income, United States, 1971-1972.



Source: First Health and Nutrition Examination Survey, Tables 15, 21, 24, 27 and 30, pages 48-49, 64-65, 72-73, 80-81, 88-89.

Deficiency of iron intake was especially prevalent. Ninety-five percent of the 1- to 5-year-olds had iron intake values below minimum standards. For both vitamins A and C, a large proportion of young children had intakes considerably below standards. The percentages of children with deficient vitamin A intakes ranged from 37 percent to 52 percent and those with deficient vitamin C intakes from 43 percent to 58 percent. (Table 74).

Biochemical Tests

Hematological determinations for all children in the sample population included hematocrit, hemoglobin, and red and white cell count. Nutritional biochemistry consisted of determinations of serum vitamins A and C, serum iron, total iron binding capacity, serum folates, total serum protein, serum albumin, serum magnesium, and serum cholesterol.

The survey yielded information on mean levels of biochemicals for the various subgroups (Table 75) as well as the percentage of persons with low values in each of the subgroups. (Table 76, Figure 2).

Hemoglobin and hematocrit were the two measures used to assess anemia. Both measurements are general rather than specific indicators and exhibited a close relationship. In this summary only the results of the more commonly used hematocrit levels are presented.

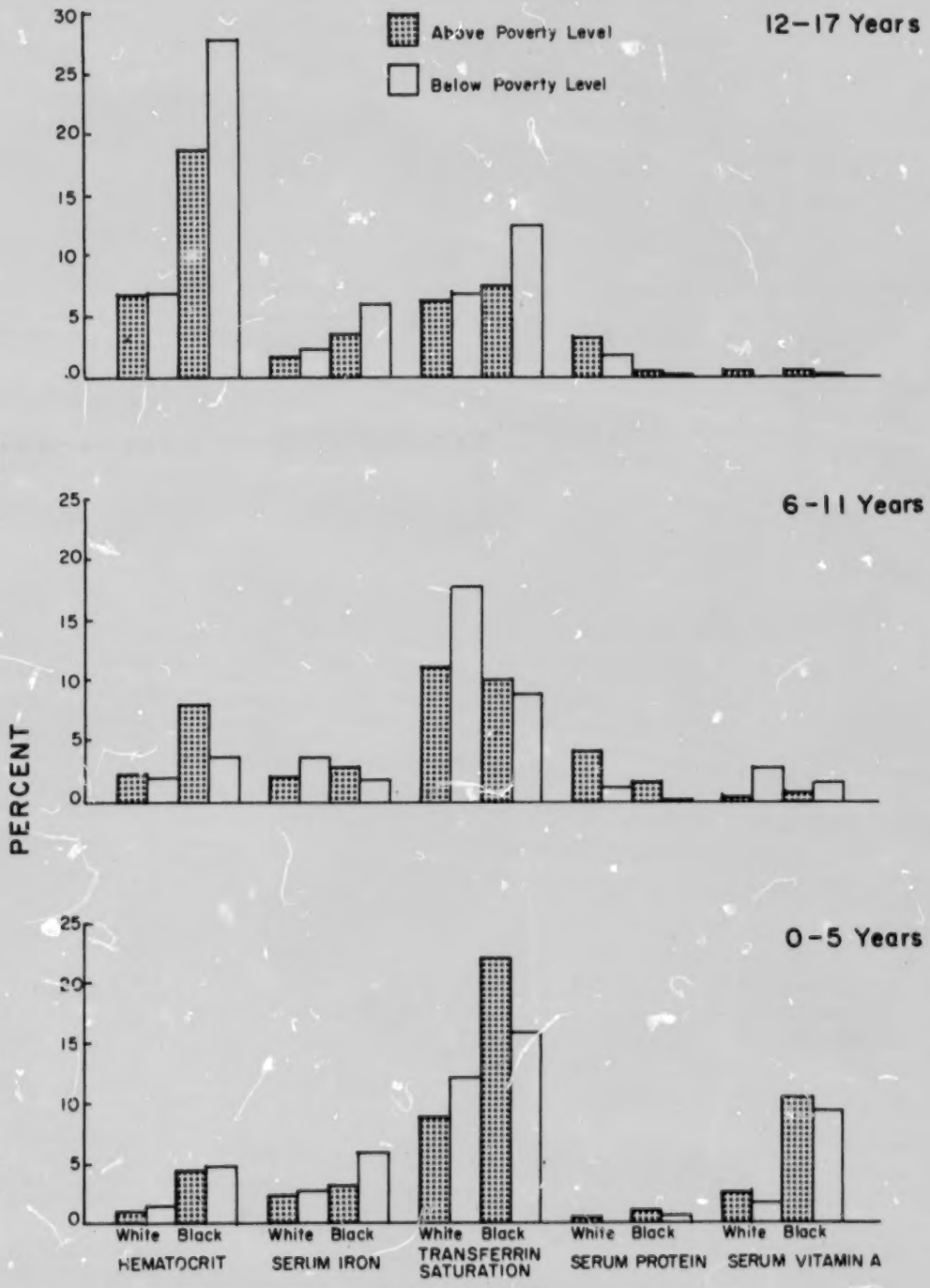
The means hematocrit level increased from 37.5 among children 1 to 5 years of age to 42.0 among children 12 to 17 years of age. Increases with age were present for both race and income groups. The mean hematocrit in each age group was higher among white children than black children. With the exception of children 6 to 11 years of age, white children from families below the poverty level had higher mean hematocrits than black children from families above the poverty level.

When the percent of children with low values rather than mean levels were compared, blacks had a higher prevalence of low hematocrits than did whites in all age groups, regardless of income level. The prevalence of low hematocrit values generally increased with age. In the 12- to 17-year age group, 7 percent of white children and 23 percent of black children had low hematocrits.

Mean serum iron levels increased with age and were higher for white children than for black children of both income groups, however, black youths, 12- to 17-year-olds, above the poverty level, measured slightly higher. Generally, there was a slightly higher percentage of black children with low serum iron values than white children. The highest prevalence of low serum iron values (6%) was among 12- to 17-year-old black children below the poverty level.

Mean transferrin saturation levels also increased with age and generally were higher among white children than black children regardless

Fig. V-2. Percent of children with low values of selected biochemicals by race and family income, United States, 1971-1972.



Source: First Health and Nutrition Examination Survey, Table 99-101, pages 34-36.

of income level. The prevalence of children with low transferrin saturation values ranged from 6 percent among white children 12 to 17 years of age above the poverty level to 22 percent among 1- to 5-year-old black children above the poverty level. There was no consistent relationship between the prevalence of low transferrin saturation values and age, race, and income.

The mean serum protein level was higher for black children than for white children regardless of income, and higher for those in the lower income group. The prevalence of low serum protein values was negligible for most of the groups, but did reach 5 percent among white children 6 to 11 years of age above the poverty level.

Mean serum albumin levels varied little among groups. There were no children with low serum albumin values.

The mean serum vitamin A level was higher for white than black children in their respective age and income groups. Mean serum vitamin A levels increased with age regardless of race or income group. The prevalence of low serum vitamin A values generally decreased with increasing age and, except for black children 1 to 5 years of age, was no higher than 3 percent. Among black children 1 to 5 years of age, however, 9 percent of the group below the poverty level and 10 percent of those above the poverty level had low vitamin A values. (Tables 75 and 76)

Height, Weight and Obseity

Black children tended to be taller than white children. Black boys weighed more than white boys at ages 1 through 11 years, however, from ages 12 through 17 years they weighed less. Both black and white girls generally weighed the same in the age group 1 to 7 years. Black girls weighed considerably more at 8 years than the white girls. From ages 9 through 17, white girls were more often, but not consistently heavier than black girls.

In general, whites had larger triceps skinfolds for both sexes, and greater values in the subscapular skinfold than the blacks.

Income levels were associated with height, weight and triceps skinfold measures without regard to sex. Children in the income group above poverty level were generally taller, heavier, and had larger median skinfolds than those in the income group below poverty level. The association was less evident for subscapular skinfold measures.

Summary

Findings of the Health and Nutritional Examination Surveys (HANES) showed that a substantial proportion of the sample population had deficient intakes of calories, proteins, iron, calcium and vitamins, particularly vitamin A and vitamin C.

There was a direct relationship between family income and intake of calories, protein and calcium. White children, regardless of income, had higher mean intakes of these three elements.

Biochemical tests indicated that children from families below the poverty level had a higher percent of low values of selected biochemicals than children from families above the poverty level. Among the two racial groups, white children within each income group had a lower percentage with deficient intakes of these biochemicals than black children in the same income group.

The anthropometric data showed very small differences in height and weight between the white children and black children, but larger differences in the two skinfold measurements. The skinfold data indicated relatively greater leanness in the black children.

B. The U.S. Ten-State Nutrition Survey, 1968-1970

In the fall of 1967, Congress directed the U.S. Department of Health, Education, and Welfare to survey and identify the prevalence, magnitude and distribution of malnutrition and related health problems within the United States. The Nutrition Program, National Center for Chronic Diseases, Bureau of Disease Prevention and Environmental Control, was designated to conduct a National Nutrition Survey. In early 1968, 10 States with large numbers of poverty families and a high prevalence of malnutrition and associated problems were selected. These States represented the geographic regions of the country and provided economic, ethnic, and sociocultural diversity as well as such factors as concentrations of migrant labor, infant and maternal mortality rates above the national averages, and variations in food-distribution and welfare programs.

The 10 States were: Texas, Louisiana, Kentucky, Michigan, New York (including a separate survey of New York City), Massachusetts, Washington, California, West Virginia, and South Carolina. Both Kentucky and West Virginia were included to provide a composite study of the Appalachian area.

Within each State, special emphasis was given to the groups most vulnerable to nutritional stress--infants, pregnant and lactating women, adolescents, and the aging. Fifty-two percent of the persons examined were 16 years of age or less; 27 percent were from 17 to 44 years; and the remaining 21 percent were over 45 years. Since the primary interest was malnutrition among the poor, the samples in the Ten-State Nutrition Survey were heavily weighted toward residents of low income areas and were not representative of the population of their State, much less that of the United States.

Almost 24,000 of the 30,000 selected families participated in the survey. Through interviews, information was obtained from approximately 80,000 people, of whom over 40,000 were examined. More than half of those examined (21,214) were children under 17 years.

The Ten-State Nutritional Survey obtained extensive demographic information on each of the families and on their sources and utilization of food. It included a 24-hour dietary recall for infants and children up to 36 months, children 10 to 16 years, pregnant and lactating women and all participants over 60 years of age. Physical and dental examinations, biochemical and anthropometric measurements were done on most selected for examination. Age group was to the nearest birthday; thus, children at any given age could be from 6 months younger to 6 months older than the exact age shown. Therefore, in the anthropometric, dental and biochemical findings summarized below, these children would be expected to show a range of values both lower and higher than the Stuart-Meredith standards which were developed on the basis

of exact age. The following summary is limited to anthropometric, dental and biochemical findings for the children under 17 years of age, and the dietary recall results for children under 3 years and for adolescents.

Height, Weight and Obesity

Height and weight are the two most widely used measurements of size in infants, children and adolescents. Greater size at a given age is presumptive evidence of better nutritional status, and smaller size can suggest relative nutritional inadequacy.

In the Ten-State Nutrition Survey from 18 to 46 percent of the children, 2 to 16 years of age, had heights falling below the 15th percentile according to the Stuart-Meredith norms. In the different sex and ethnic groups 34 to 46 percent of 2 to 4-year-olds, 22 to 45 percent of children 6 to 12 years, and 18 to 34 percent of adolescents were short-for-age. The sex of ethnic groups showed little difference in the prevalence of short-for-age children at any given age. (Table 77, Figure 3).

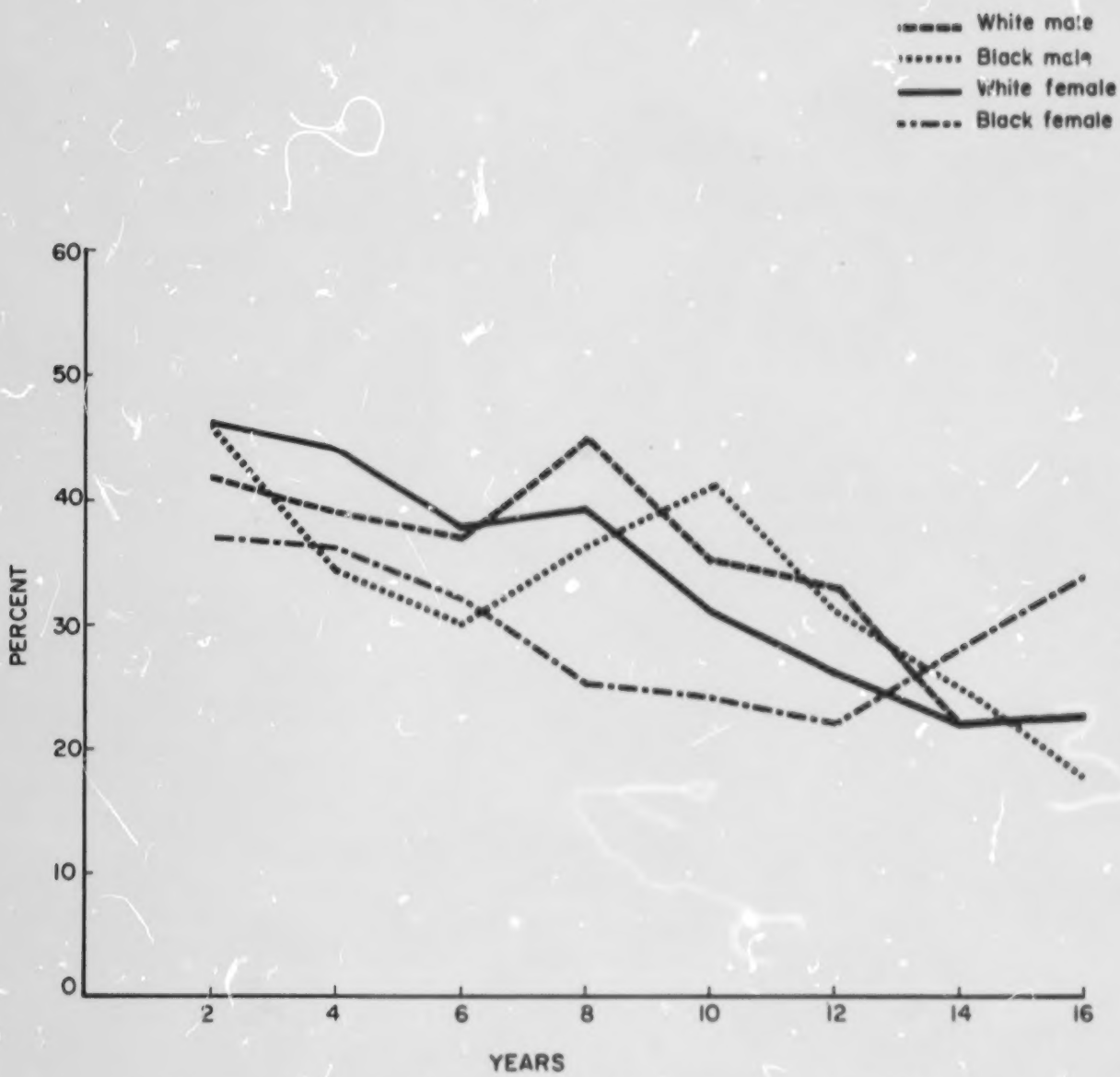
When weights were compared with the Stuart-Meredith Standards (Table 77, Figure 4), 14 to 45 percent of the children fell below the 15th percentile. The percentage of underweight children ranged from 22 to 34 percent among preschoolers (ages 2 to 4 years), from 14 to 45 percent among children 6 to 12 years of age, and from 14 to 24 percent among 14 to 16 year olds. A higher percentage of black adolescents were more likely to be underweight than females.

Obesity is a nutritionally-related problem of significant public health concern because of its association with increased rates of cardiovascular and other chronic diseases. Selzer and Mayer's (1965) obesity standards for Caucasian Americans were used to define the extent of obesity in the survey population. The percentage of obese children in the 12- to 17-year age span ranged from 16 to 29 percent among white boys, and 10 to 15 percent among white girls; from 9 to 13 percent among black boys, and 9 to 19 percent among black girls. White boys had a consistently higher percentage of obesity than their black peers. No comparable consistent relationship was found for white and black girls. (Table 78).

Dental Examination

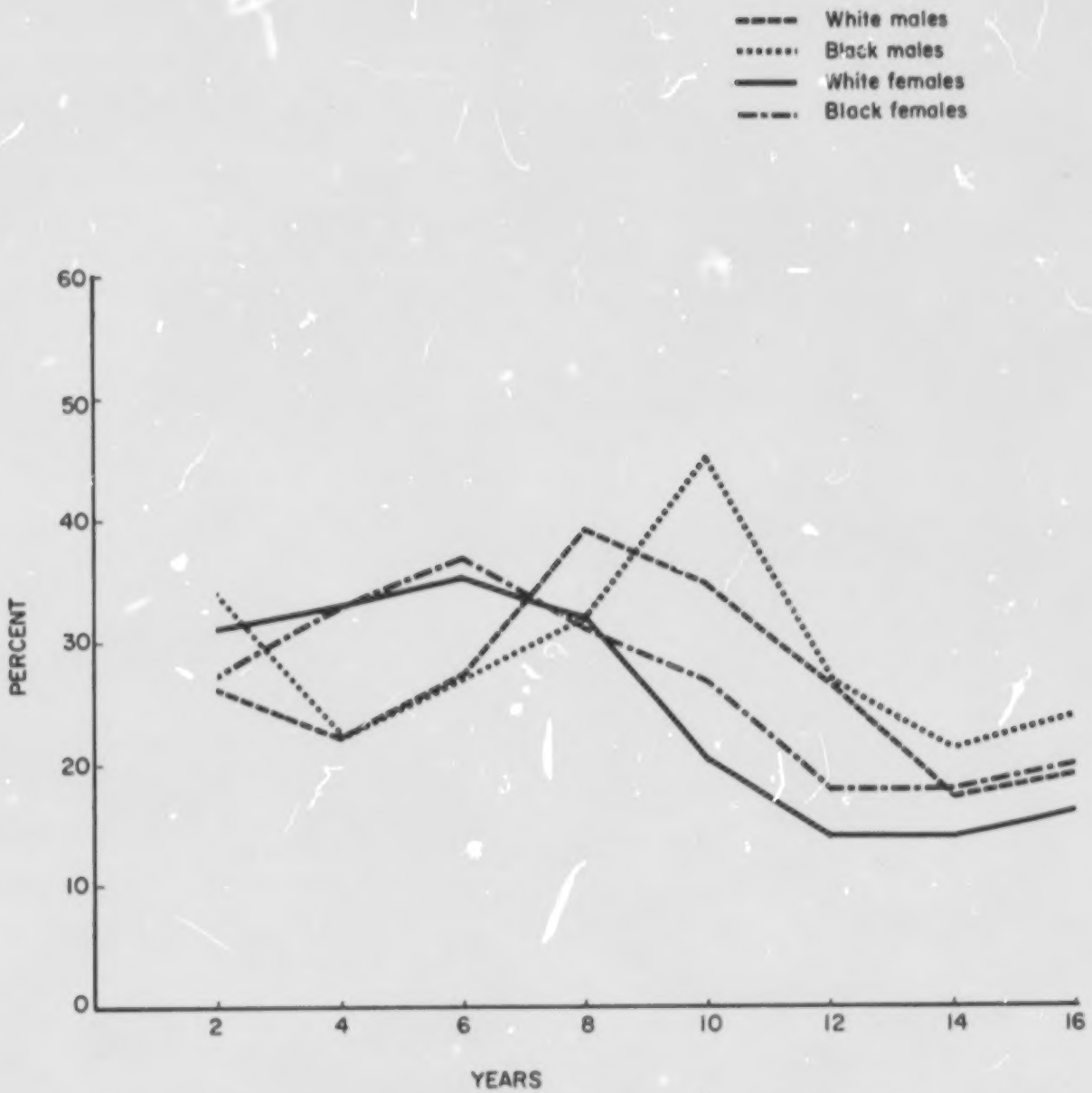
The Decayed-Missing-Filled Index (DMF) describes the mean total number of decayed, missing, and filled permanent teeth. It is age-dependent and serves as a reasonably accurate estimate of dental caries experience in permanent teeth. The caries experience in children's primary teeth was measured by the decayed and filled (df) teeth index,

Fig. V-3. Percent of children and youth under 17 years of age below the 15th percentile for height: United States, 1968-1970.



Source: Ten-State Nutrition Survey, Vol. III, Table 1, page 19.

Fig. V-4. Percent of children and youth under 17 years of age below the 15th percentile for weight: United States, 1968-1970.



Source: Ten-State Nutrition Survey, Vol. III, Table 3, page 23.

the mean total number of decayed and filled deciduous teeth. Missing teeth were omitted because of the difficulty in determining whether the tooth was shed normally or extracted due to decay.

The mean number of df teeth per child increased with age up to 6 years in each ethnic group. (Table 79) For all groups of children and youth aged 6 to 17 years the number of DMF teeth also increased with age. (Table 80) However, the number of DMF teeth accumulated faster in white children. At earlier ages the differences between ethnic groups were relatively small (less than 1.0) but at age 14, substantial differences were noted. By 17 years, white children had an average of two more DMF teeth than black and Spanish-American children (10.4 and 8.4, respectively). The higher DMF scores among whites at 17 years were due largely to filled teeth (5.8 per child, in comparison with 1.1 and 2.3 filled teeth for black and Spanish-American children, respectively). Black children of 17 years had the most decayed teeth (5.9), in comparison to 4.5 and 3.1 decayed teeth for Spanish-American and white children, respectively. Black and white children had similar numbers of missing teeth; Spanish-American children had fewer. (Figure 5)

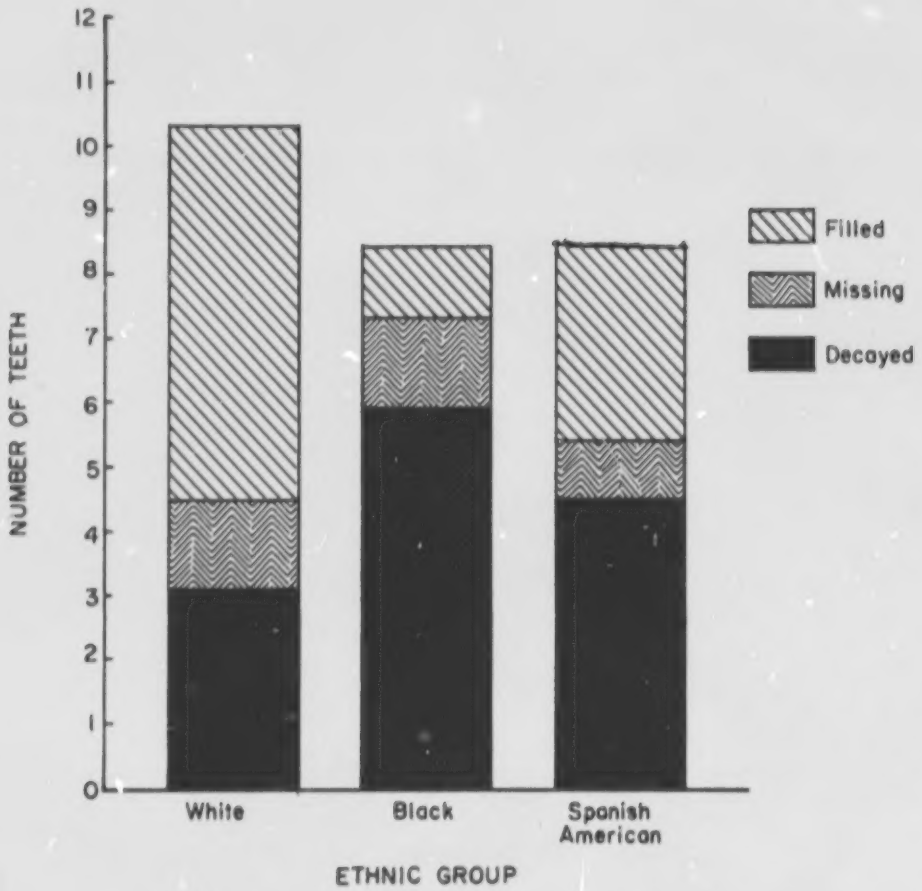
Biochemical Measurements

Approximately half of the survey population had blood and urine specimens taken for one or more of the following determinations: hemoglobin, hematocrit, serum albumin, protein, vitamin A, vitamin C, folic acid, red blood cell folate and urinary riboflavin, thiamine, and iodine. Determinations of serum iron and transferrin saturation were made for all persons with hemoglobin values classified as low. Standards used in the Ten-State Nutrition Survey were based on the Interdepartmental Committee on Nutrition for National Defense (1963), which established guidelines for the interpretation of biochemical data collected during nutrition surveys conducted in many parts of the world.

More than 33,000 blood samples were collected and analyzed for hemoglobin. The hemoglobin data were evaluated on the basis of the percent of individuals with values below the level considered normal. Norms vary with sex and age and there is not complete agreement among authorities concerning the levels of hemoglobin at which a diagnosis of anemia should be made. Values used in the study are shown in Table 81 together with the percent of children under 17 with deficient or low hemoglobin values by age and ethnic group. Black children and youth had the poorest hemoglobin status with 32 percent having deficient values. The white population, with 9 percent deficient values, had the best hemoglobin status followed by the Spanish-American children with 14 percent.

Hemoglobin status was not age dependent. There was no consistent trend in the prevalence of deficient values with increasing age.

Fig. V-5. Mean number of Decayed, Missing and Filled teeth among 17-year-old youths by ethnic group: United States, 1968-1970.



Source: Ten-State Nutrition Survey, Vol. III, Tables 4A, 4B, 5A, 5B, pages 118-119.

Comparison of hemoglobin results for males and females showed that in all ethnic groups, males aged 13 to 16 years had higher percentages with deficient values, possibly an artifact of the standards used. (Table 81)

Vitamin C is a water-soluble vitamin, and serum concentrations of the vitamin reflect immediate past dietary intakes. Table 82 shows the percent of children under 17 with deficient serum vitamin C values by age, sex and ethnic group. There is a higher prevalence of deficient values among blacks than among whites and Spanish-Americans.

Serum vitamin C values were found to be related to vitamin C intakes, suggesting that selection of food with higher vitamin C content, rather than an increase in the quantity of foods eaten, leads to higher levels of vitamin C.

Vitamin A nutritional status was found to be a major public health concern. Children and youth of all ethnic groups had a relatively high prevalence of deficient vitamin A values.

Plasma vitamin A concentrations in general were age-dependent as shown by an increase in mean vitamin A values and decrease in the percentage of deficient values with increasing age. (Table 83)

The highest percentage of children and youth with deficient low plasma vitamin A values was found among the Spanish-Americans and the lowest among whites. (Table 83)

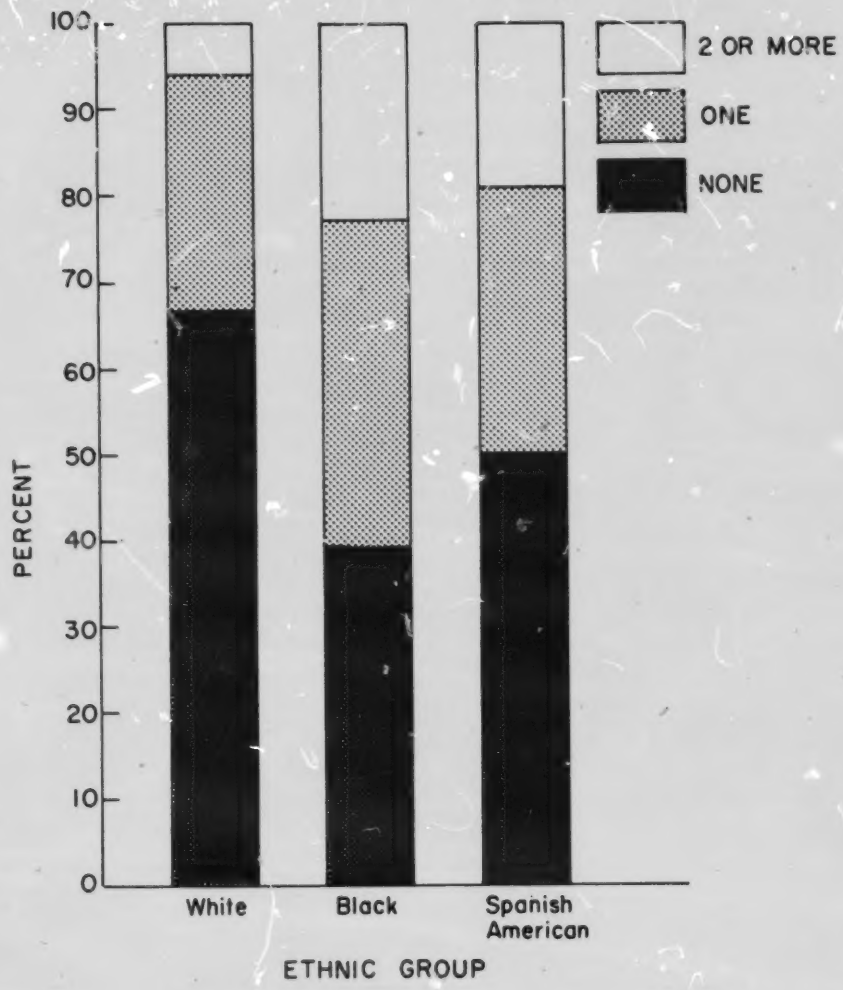
Since diets are rarely deficient in only a single nutrient, the prevalence of multiple deficient biochemicals was reviewed using six biochemical parameters: hemoglobin, serum albumin, serum vitamin A, serum vitamin C, urinary thiamine, and urinary riboflavin

Table 84 and Figure 6 show the number of children and youths by ethnic group tested for six biochemicals and the percent with deficient values in none, one, or two or more. Sixty-six percent of the white, 50 percent of the Spanish-American, and 39 percent of the black population were found to have no deficient values for any of the six parameters. The percentage of Spanish-Americans and blacks with two or more deficient values were 19 percent and 23 percent in contrast to 6 percent among whites.

Dietary Intake

Dietary intakes, derived from dietary recall information, showed considerable variation for the early childhood and adolescent samples. The caloric value of diets and levels of nutrient intakes varied among the ethnic groups, and were generally lower for blacks and Spanish-Americans than whites. On the other hand, the nutritional quality of the diet computed as amount of nutrients per 1,000 kcal showed little variation, with the exception of vitamin A. (Table 85)

Fig. V-6. Percent of children 2-16 with deficient or low values in none, one or two or more biochemicals, by ethnic group: United States, 1968-1970.



Source: Ten-State Nutrition Survey, Vol. IV, Tables 1 and 2, page 291.

With the exception of iron, the mean nutrient intakes were adequate to meet standards for the infancy and early childhood age groups. However, there were large percentages of children in each age and ethnic group with intakes below standard. For example, 13 to 47 percent of children up to 36 months had less than standard intakes of vitamin A. In the same age range, below standard vitamin C intakes ranged from 33 to 59 percent. (Table 86). Twenty-six to 97 percent of children in this age range had intakes of iron below standard. (Table 87). The intakes of iron and vitamin A appeared to be related to the total amount of food consumed, while the intake of vitamin C was more closely related to the vitamin C quality of the diet.

During adolescence the mean intake of nutrients with the exception of calories and iron approached or met dietary standards but large percentages of adolescents had below standard intakes. Black adolescents generally had lower levels of intakes than whites and Spanish-Americans.

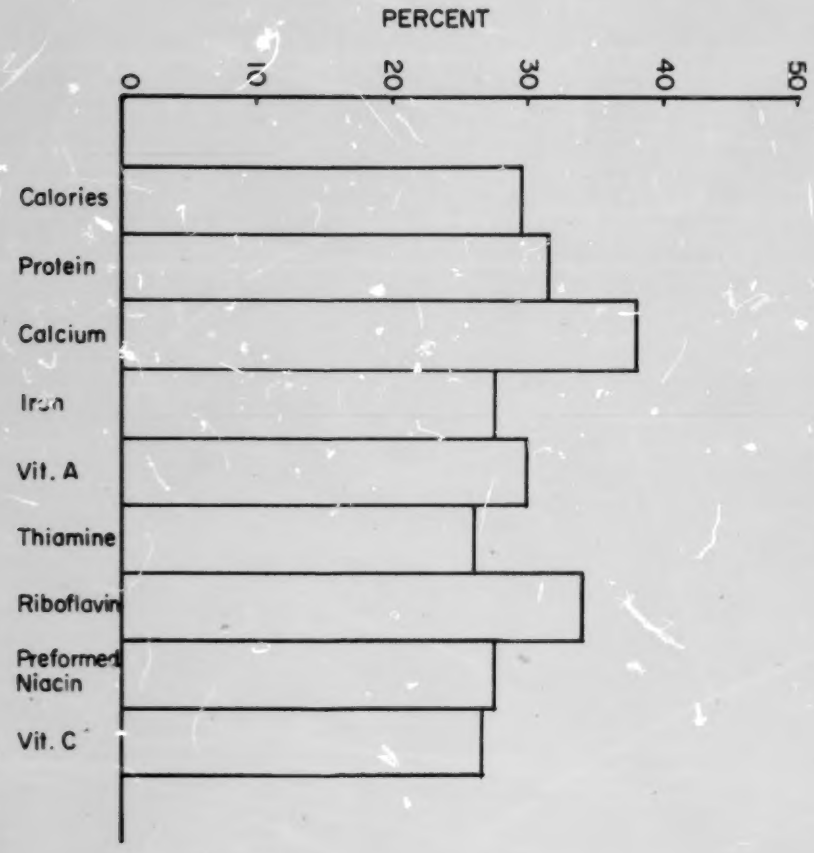
For vitamin A, Spanish-American adolescents seemed to be at greatest risk of having low mean intakes, the percent with deficient intakes ranged from 52 to 73 percent depending on age. The range for white adolescents was from 44 to 53 percent, and from 53 to 66 percent for black adolescents. (Table 85).

The percent of adolescents deficient in vitamin C was not quite as marked as for vitamin A. The ranges were white, 35 to 40 percent; black, 43 to 53 percent; and Spanish-American, 44 to 56 percent. (Table 86).

Mean intakes of iron were low for all adolescents. The percentages of those with below standard intakes were even higher than for the other nutrients. Black girls had the highest percent of deficiency at all ages between 10 and 16 years (89% to 91%). (Table 87)

Dietary recall information was reviewed to ascertain the contribution of the school lunch to the diets of 10- to 16-year-olds. All subjects were questioned about the availability of an organized program in their community. For those who participated, the school lunch provided a substantial portion of their nutrient intake. (Table 88, Figure 7) For the three nutrients reviewed -- vitamins A and C, and iron -- the lunch contributed more than a quarter of the children's intakes.

Fig. V-7. Percent of Daily Nutrient Intake Contribution of School Lunch Programs: United States 1968-1970.



Source: Ten-State Nutrition Survey, Volume V, Table 12, page 316.

Summary

The Ten-State Nutrition Survey indicated that a significant proportion of the childhood population surveyed was either undernourished according to recommended standards or was at high risk of developing nutritional problems. However, nutritional problems in different segments of the population varied in severity and in regard to the specific nutrients involved. In general, evidence of poor nutrition was found most commonly among blacks, less commonly among Spanish-Americans, and least among white children.

Adolescents between 10 and 16 years had the highest prevalence of unsatisfactory nutritional status. Male adolescents had more evidence of malnutrition than females. The dietary recall data confirmed that a substantial number of children and adolescents have intakes below the dietary standards. For those who participated, the school lunch program made an important contribution to their overall nutrition.

C. A Study of Nutritional Status of Preschool Children in the United States, 1968-1970*

The Preschool Nutrition Survey (PNS) was planned to provide an overview of the nutritional status of preschool children in the United States. The study was conducted by the Children's Hospital Research Foundation, Columbus, Ohio, and funded by the Department of Health, Education, and Welfare. As other studies were focusing on populations at risk, PNS investigators looked at preschool children from all income levels, geographic regions and racial backgrounds.

Information was obtained about the family's socioeconomic status, and the child's eating habits, current dietary intake and medical history. Physical examinations and biochemical evaluations were done to identify children with nutritional problems.

The Survey Research Center of the University of Michigan selected the sample areas with 5,300 children between 1 and 6 years of age, belonging to 3,850 families. Of the estimated 5,300 eligible preschoolers, 40 percent were interviewed and had clinical and biochemical examinations; 25 percent were interviewed only; and 35 percent did not participate in any phase of the study.

Fifty-two percent of the subjects were boys and 48 percent were girls; 80 percent were white, 14 percent black, 5 percent Latin American and 1 percent American Indian or Asian. Eighteen percent of the children were between 12 and 23 months of age; the remainder were equally divided among four successive age groups; 24-35, 36-47, 48-59, and 60-71 months.

To obtain community cooperation, a descriptive outline of the project, including a statement of objectives, and an explanation of the phases of the study were sent to public health officials, and medical and dietetic associations prior to the inception of the field work. The mailing was followed up with informal personal meetings conducted by a project nutritionist. The nutritionist also obtained information about existing and planned service projects and programs in each community. A husband-wife demographer team provided the initial contact between the PNS and the families.

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*George M. Owen, Kathryn M. Kram, Philip J. Garry, Jay E. Lowe, and A. Harold Lubin, "A Study of Nutritional Status of Preschool Children in the United States, 1968-1970," Supplement to Pediatrics, Volume 53, No. 4, April 1974.

Detailed information concerning the household composition of each sample family was obtained by the dietary interviewers. Intake data were collected in the home from the person responsible for feeding the child, usually the mother or mother substitute. They were asked to recall the food and beverages eaten by the child that day and were given a record form on which to list the kinds and amounts of intake by the child for the next 2 days. The interviewers returned to the home on 2 consecutive days to review and collect the records. During the home visits the interviewers also obtained information on the socioeconomic status and life style of the family.

The Warner Index Status Characteristics based on ratings of occupation, source of income, dwelling type and area was used to classify families for socioeconomic rank: I, lower lower, II, upper lower; III, lower middle; and IV, upper middle. There were no families in rank V, upper.

Table A

Warner Rank	No. of families	No. of children
I Lower lower	392	624
II Upper lower	960	1,380
III Lower middle	784	1,063
IV Upper middle	266	374
V Upper	0	0
Total	2,402	3,441

Medical examinations, anthropometric and biochemical evaluations were done the same week as the dietary interviews. Slightly more than half of the children seen in the clinics were examined by a pedodontist.

Dietary Intakes and Practices

Socioeconomic status, age and race had a differential bearing on the amount, kind and quality of food intake, food preparation and eating patterns.

There was a clearcut relationship between socioeconomic status and quantity of food -- the average nutrient intake of children from the lowest socioeconomic level was generally lower than that of children from higher levels. (Table 89, Figure 8). The percentage of children with low daily intakes of selected nutrients was consistently higher for children in the lowest socioeconomic level. (Table 90).

Table 91 shows the variations in mean intake of selected nutrients by age, race and Warner Rank. Protein intake showed little variation with age, race or socioeconomic status. Black children's intakes of iron per 1,000 kcal were about 1 mg higher than those of white children, but there was little difference by age or socioeconomic status. In contrast, average calcium intakes of black children were between 75 and 100 mg/1,000 kcal less than those of white children. The average intakes of water-soluble vitamins were approximately 50 percent greater for white children in the two upper socioeconomic groups than for children of any race in the other groups. The differences represented the greater use of vitamin supplements and greater consumption of citrus fruits, by these groups.

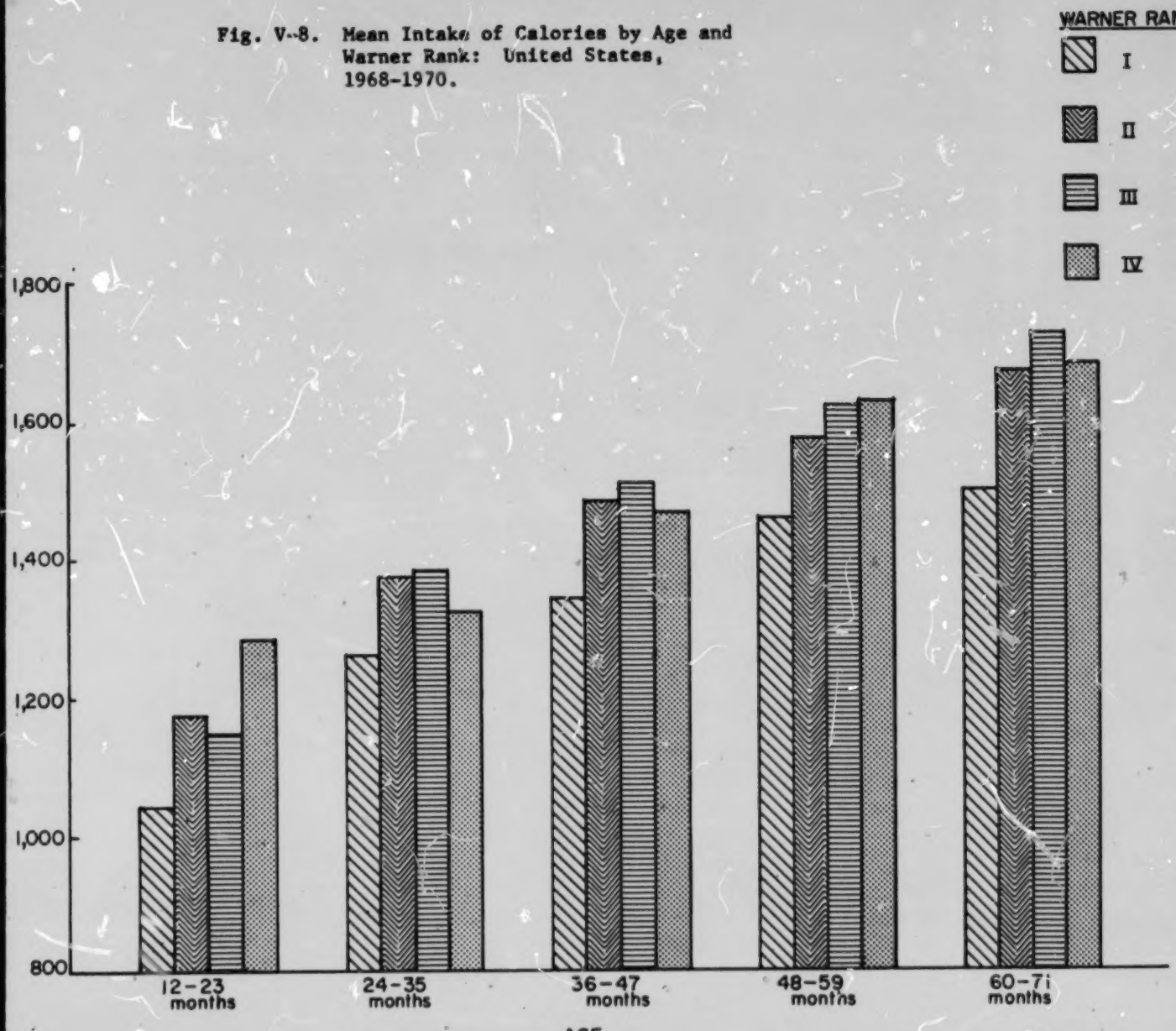
The percentage of children using vitamin/mineral supplements tended to increase as socioeconomic status improved and to decrease with advancing age. (Table 92). The majority of children taking supplements were receiving multi-vitamin preparations. Among Warner Rank I children there was little difference between those who did or did not participate in Federal Food Programs with respect to energy and nutrient intakes. (Table 93).

While age, socioeconomic status and race had no marked effect on nutritive quality, they did influence eating patterns. There was a progressive decrease in the use of dairy products with increase in age. This was most obvious in the Warner Rank I children and particularly among black children. The average consumption of milk at age 3 was one to two cups although some black children were drinking only one-half cup daily.

Consumption of meat and poultry varied little by socioeconomic status. The lowest socioeconomic families tended to use more pork and pork products (frankfurters, lunch meats, etc.) in their meals, but despite lower incomes did not skimp on meat in the children's diets.

Cereal grains were major contributors of iron and calories to the children's diets. The lower socioeconomic children ate more bread, rolls and biscuits, while the other children ate more cookies, cakes and pies. The upper socioeconomic children consumed more fortified ready-to-eat cereals than those of lower ranks.

Fig. V-8. Mean Intake of Calories by Age and Warner Rank: United States, 1968-1970.



Source: Owen, G. M., et al., Appendix.

Children consumed a greater amount of fruit with increasing socioeconomic level. However, contrary to popular belief, poor children did not substitute soft drinks for more nutritious fruit juices or vitamin-fortified beverages.

Some convenience foods purchased in retail stores and prepared at home were eaten frequently by children 4 years and older. Six hundred children (18%) used them at least once in 10 days. Such food provided approximately one-third of the day's Recommended Dietary Allowance (RDA) of protein and one-fifth of the energy and other nutrients. Only about 100 children had significant intakes of food purchased at "fast food" eating places, and were getting about two-thirds of the RDA of protein and one-third of energy and other nutrients.

Analysis of expenditures for food by socioeconomic status reveals that the median amount spent on food came to 40 percent, 26 percent, 20 percent, and 16 percent of gross family income for Warner Ranks I-IV, respectively. (Table 94, Figure 9). As many as 36 percent of families in the lower socioeconomic level spent more than half of their income on food.

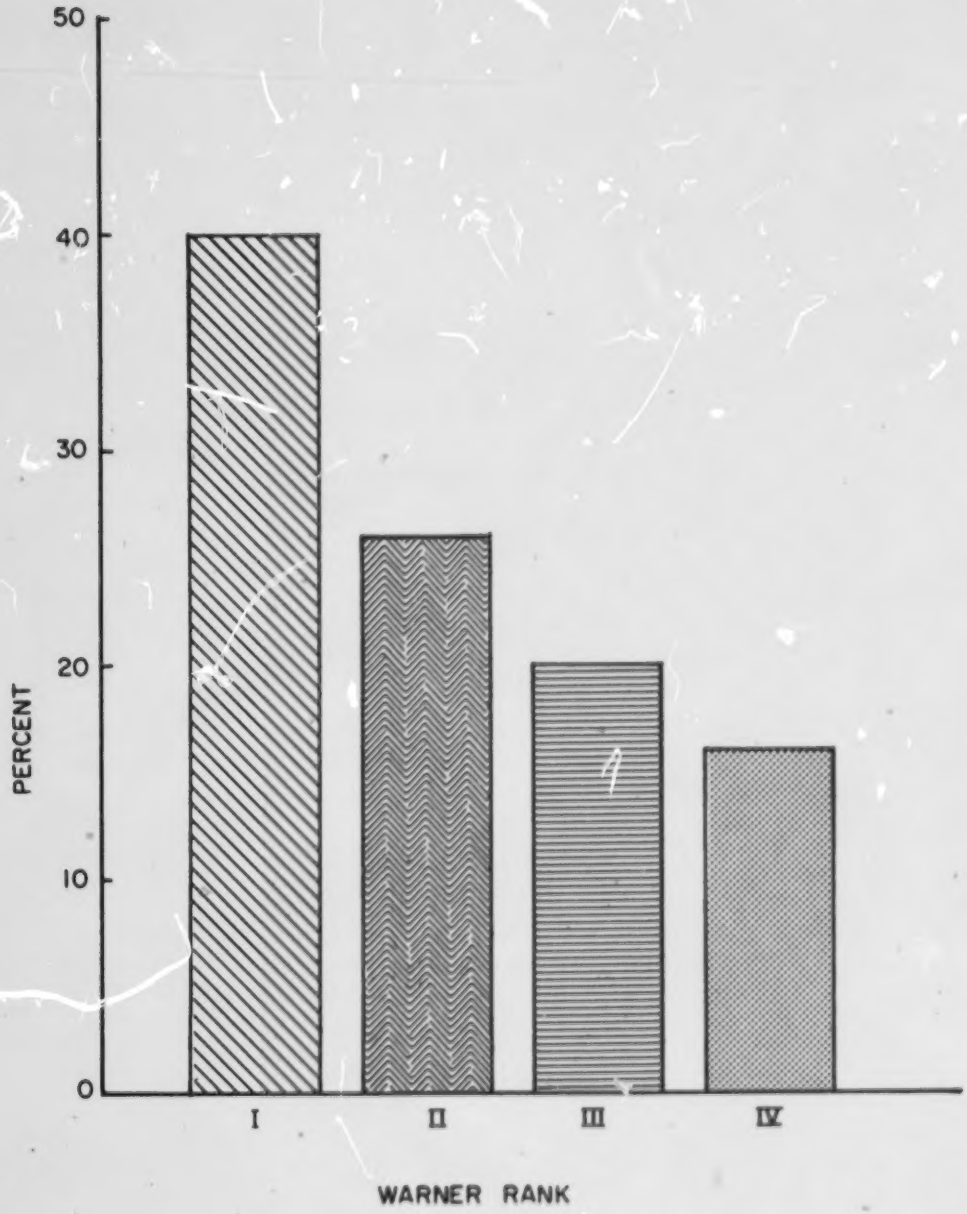
Supermarkets were used for major grocery shopping by 84 percent of all families. Low-income families were more likely (three to one) to shop at small grocery stores than higher income families. One-third of the families who shopped at small grocery stores did so because they believed food prices were lower than in supermarkets. Shopping for food was usually the mother's responsibility, although in some lower socioeconomic families others shared the duties.

Having food available or having the ability to purchase food did not guarantee that a family ate well or properly from a nutritional point of view. The manner in which the homemaker managed the budget, shopped for and prepared food and encouraged her family to eat had an influence on the nutritional status of her children.

More of the mothers in the upper socioeconomic groups enjoyed cooking, frequently tried new foods or new ways of fixing foods and used printed recipes than those in the other groups. Mothers in Warner Rank I tended to obtain food preparation information from neighbors or relatives, or said they did not know how to get more information about food. Forty-one percent of these mothers used a cookbook as a reference while 61 percent in Warner Rank IV did so.

Although children's reactions to new foods did not seem to be related to socioeconomic status, there were differences by age. Children in the 12-23 month age group in most instances were willing to try a new fruit or vegetable. As the children grew older, more refused new foods, particularly vegetables.

Fig. V-9. Median percentage of gross family income spent on food by Warner Rank: United States, 1968-1970.



Source: Owen, G.M., et al., text, page 630.

Parents in Warner Rank I were more permissive about feeding and at the same time often used food as a reward or punishment than parents in higher ranks. Children in the higher socioeconomic group were required more as a matter of everyday life to eat well, whereas the Warner Rank I child could eat poorly, by choice or by chance, with fewer negative behavioral consequences. Parents, irrespective of their socioeconomic rank, were less permissive with older children. (Table 95).

Clinical Examination

Few symptoms of malnutrition were found in the clinical examinations. Evidence of malnutrition was present in dietary and medical histories, and laboratory examinations but usually was not severe enough to result in clinical symptoms.

A number of children had abnormal physical examinations, but there was no correlation between abnormal physical findings and dietary or biochemical variables in individual children. On the other hand, group data presented some evidence suggestive of possible associations between diet and clinical findings.

Clinical signs suggestive of malnutrition and other physical abnormalities related to nutritional status were more prevalent among Warner Rank I children. (Table 96).

Children in the lower socioeconomic status groups and particularly black children had the highest prevalence of caries. (Table 97). Because of the small number of black children who had dental examinations, data on deciduous tooth eruption were summaried for white children only. The number of erupted teeth positively related to height, weight, and head circumference in boys; only the association between teeth and height was significant among girls.

Height, Weight and Obesity

With few exceptions, black children were heavier and taller than white children. Children in this group, like those of the Ten-State Nutrition Survey, had low heights and weights compared to the Stuart-Meredith norms. These differences reflect several factors including greater heterogeneity and board age intervals.

Head circumferences showed slight and inconsistent differences between black and white children. White children had greater skinfold thickness than black children in the older age groups. (Table 98).

A comparison of x-rays of the left wrist showed that the black children had a greater number of ossification centers than the white children, and that girls had more centers than boys.

Biochemical Variables

As their socioeconomic rank decreased, the number of children with unacceptable or low values in the biochemical variables increased. (Figure 10).

Mean hemoglobin values were lowest in Warner Rank I children and increased progressively in each Warner Rank and for each age group. (Table 99). Mean levels of hemoglobin were higher in whites than in blacks for each age group. White children who received vitamin/mineral supplements had consistently higher mean hemoglobin values than non-supplemented white children. However, black children who received supplements did not have higher hemoglobin values than non-supplemented black children. For boys in this sample, there was a relationship between height and weight and hemoglobin values.

Transferrin saturation values reflecting iron stores increased with age. Mean values for 12 to 23-month-old children varied from 13 to 18 percent, and increased with age until approximately 47 months, when they stabilized at 23 to 24 percent. (Table 99). Levels in white children were higher than levels in black children in the 12 to 23-month-old age groups; the difference was less obvious in the older children.

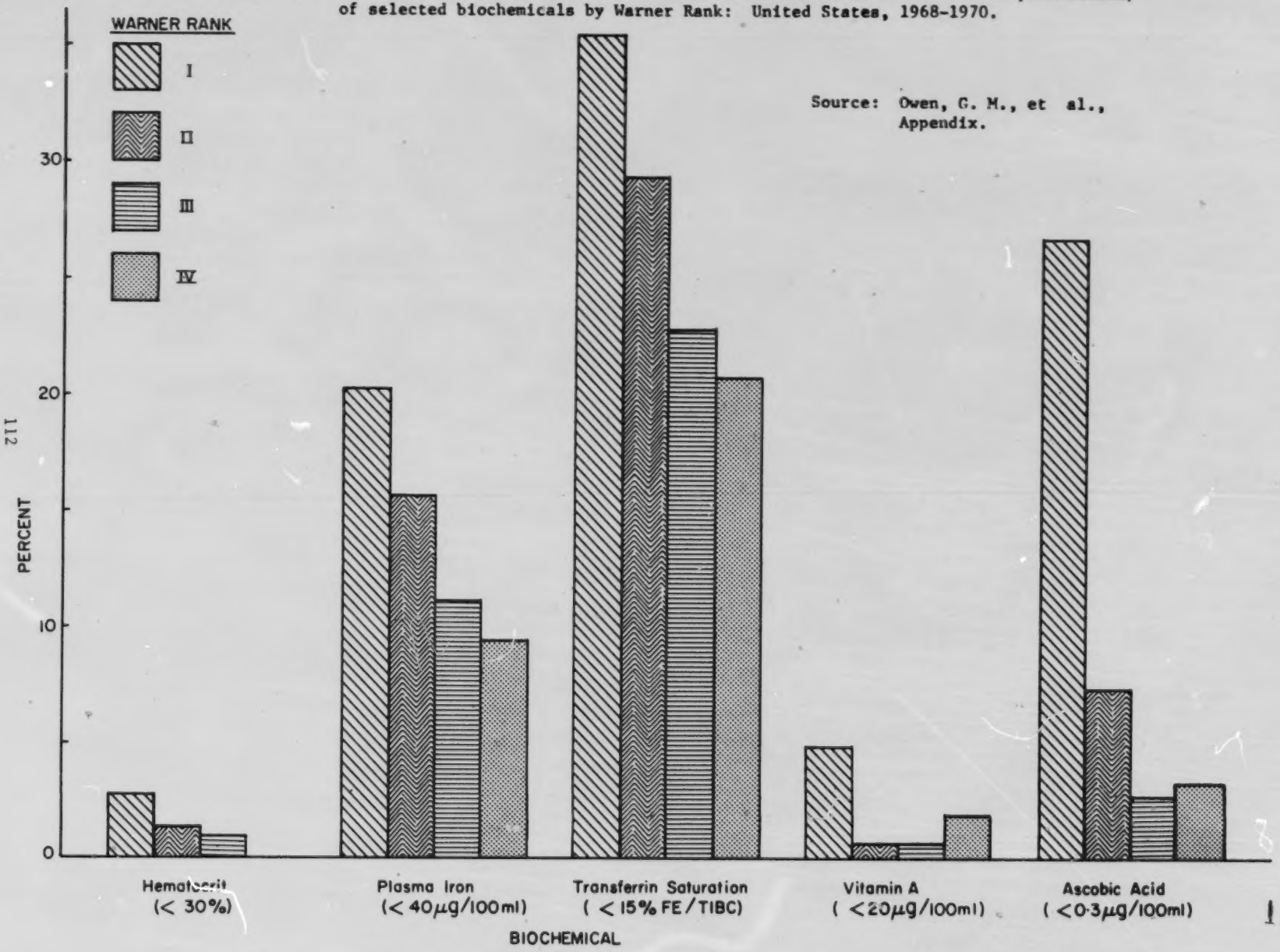
In each age group total protein levels tended to be higher in black children than in white children. As the socioeconomic situations improved there was a trend towards decrease in protein intake. Serum concentration of albumin was consistently high, even in the lower socioeconomic groups.

White children had higher values of vitamin A than black children, which may have been due to the use of vitamin/mineral supplements. The majority of the black children were in Warner Group I and their diets were frequently insufficient.

Other findings showed that black children had consistently lower plasma triglycerides than white children, although their plasma cholesterol levels were the same. Also, triglyceride values decreased with increasing age, as did dietary intake of total energy, carbohydrates, fat and protein.

In general, there was little relationship between a child's nutrient intakes and biochemical variables with the exception of water-soluble vitamins and proteins.

Fig. V-10. Percentage of children with low or deficient levels (cutoff shown in parentheses) of selected biochemicals by Warner Rank: United States, 1968-1970.



Source: Owen, G. M., et al., Appendix.

Summary

Signs of nutritional risk among preschool children - lower dietary intake, lower biochemical indices, and smaller physical size for age - were clustered in the lower socioeconomic groups. The key nutritional problem for these children was insufficiency of food rather than poor planning or poor use of resources. With the possible exception of ascorbic acid, nutritional quality of the diet was not linked to socioeconomic status. Participation in Federal food programs seemed to have little impact on the energy and nutrient intakes of poor children. Socioeconomic status, race and age influenced eating patterns and the content, if not the quality, of the diet.

The need for animal protein, the most costly item in the diet, may have been oversold at the expense of cheaper and equally nourishing alternatives. Vitamin supplements contributed substantial amounts of vitamins to the total intakes. Many children whose diets seemed adequate were taking supplements.

The great increase in the use of convenience foods suggested the need for guidelines for the composition, production and marketing of these foods as well as of all processed foods.

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VI. THE HOSPITAL DISCHARGE SURVEY, 1968-1971

Since 1965, the National Center for Health Statistics Hospital Discharge Survey has collected information on short-stay hospital utilization by diagnosis. The information is gathered from hospital medical records of inpatients discharged from a national sample of non-Federal general and special short-stay hospitals. The information relating to children under 15 years has been culled from findings for 1968-1971.

During 1971, more than 4 million children under 15 were hospitalized. The frequency of hospitalization was higher among boys than girls -- 56 percent of the total were boys; 44 percent girls. The annual rate of discharges for the children was 702.3 for 10,000 children under 15 years, with the boys' rate 22 percent higher than the girls'. (Table 100).

Children under 1 year had the highest rate of days of care -- 1,266.8 for every 1,000 per year. These rates decreased with increasing age, and for all age groups were higher for boys than girls. (Table 101).

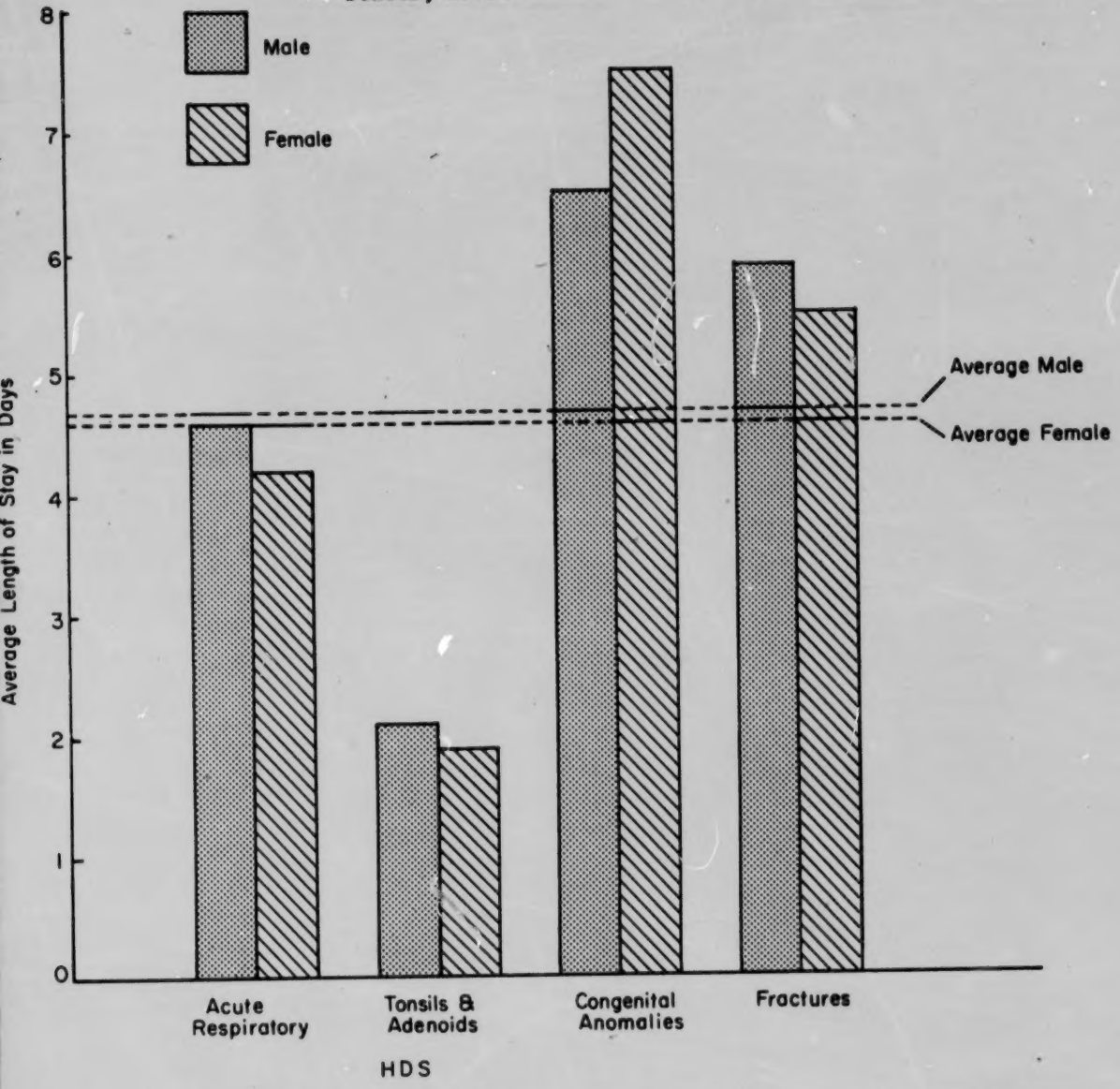
The average length of stay for children was just under 5 days and about the same for boys and girls (4.7 and 4.6 days, respectively). The length of stay did, of course, vary by diagnosis, from a low of 2 days for hypertrophy of tonsils and adenoids to a high of almost 7 days for congenital anomalies. (Figure 1). The average hospital stay was 6.5 days for children under 1 year of age compared to just over 4 days for children in the older groups. Length of stay was also longer for other-than-white than for white children. The respective averages were 6.5 and 4.4., a differential of more than 2 days. (Tables 100, 101 and 102).

Regional comparisons were made for rates of discharge, days of care and average length of stay. Rates of discharge were highest in the North Central Region and lowest in the West (85.1 and 54.4 per 1,000 children, respectively). Rate of days of care was also highest in the North Central region and lowest in the West. The length of stay showed a slightly different regional pattern; the average was longest in the Northeast (5.2 days) and shortest in the West (3.6). (Table 103).

Diseases of the respiratory system were the single largest category accounting for a third of children's hospitalization. (Figure 2). Of the leading conditions, more than half were hypertrophy of the tonsils and adenoids. The discharge rates for this diagnosis were higher for girls than for boys. (Table 100).

Over the 3-year period, 1968-1970, total charges as well as the average inpatient charge increased substantially for children under 15 years of age. (Table 104). Total charges rose by 36 percent and the average charge per episode of hospitalization increased by 35 percent. The total charges, but not the average charge per episode, were higher for boys than girls for each of the 3 years. (Table 104).

Fig. VI-1. Average length of stay for inpatients under 15 years by selected diagnostic conditions and sex: United States, 1971.



Source: Vital and Health Statistics, Series 13 - No. 16, Table G, page 9.

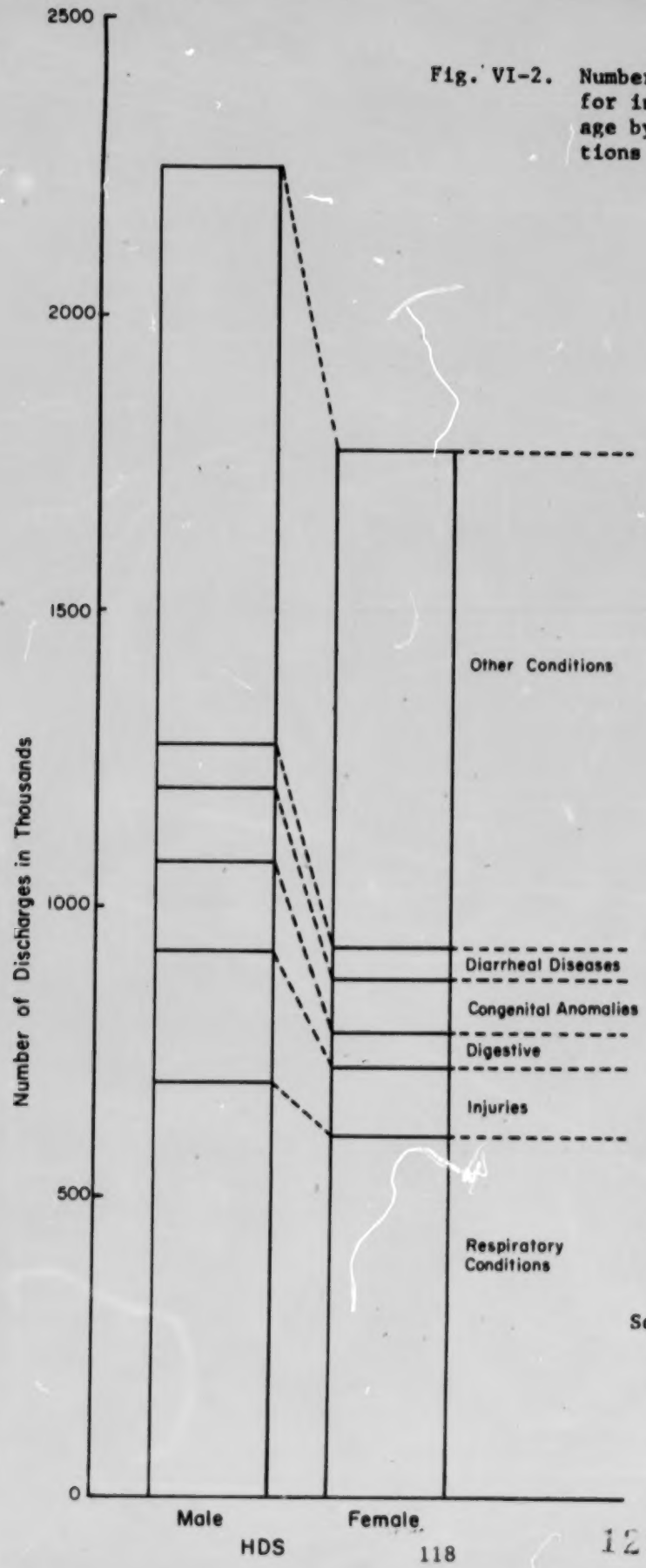


Fig. VI-2. Number of discharges in thousands for inpatients under 15 years of age by selected diagnostic conditions and sex: United States, 1971.

Source: Vital and Health Statistics, Series 13 - No.16, Table G, page 9.

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VII. ADOLESCENT HEALTH IN HARLEM, 1968-1970

"Adolescent Health In Harlem" focused on the health and health care of minority youth from a single urban neighborhood. The study was conducted by the Columbia University School of Public Health in collaboration with Harlem Hospital Center and was funded by the Division of Research, Maternal and Child Health Service. From the very beginning it was envisioned as "a combination of research and the delivery of care in a community where health problems proliferate."

The original intent had been to interview and examine a subsample of 2,000 children 12 to 17-years-old. Community protests to certain aspects of the study resulted in several modifications, including a reduction in the size of the sample. However, the objectives of the study always remained: 1) to determine the health status of a cross-section of adolescents in the community; 2) to assess their needs for health care; and 3) to make recommendations concerning improvement in the delivery of care to this age group.

The focus of the study was on current health status, defined as conditions reported for the year prior to the interview or the medical examination. The interest was in both "subjective" and "objective" measures of health -- the adolescents' self-reports about their own health as well as the observations of physicians and the information culled from available medical records. In the assessment of the adolescents' needs for health care, the concern also was with the subjects' reported utilization of services and their perceptions of what they needed as well as the physician's identification of conditions requiring care.

The youth cycle of the Health Examination Survey provided the model for some of the procedures used in the study of the Harlem adolescents. The structured interviews encompassed three major areas: 1) physical health, including health problems, practices and utilization of medical services; 2) emotional health problems, psychosomatic symptoms, fears and worries, moods and affect, and self-esteem; 3) social health and related matters such as educational and occupational experiences and aspirations, group and community activities, peer relationships, use of leisure time, freedom and autonomy. Prior to inviting the adolescent to become part of the study, consent and a brief report on the child's health were obtained from the parents. At the conclusion of the interview, an appointment was made for a medical examination at special clinics arranged by the Ambulatory Care Service at Harlem Hospital.

The examinations were conducted by an interdisciplinary team of physicians, dentists, nurses and technicians, and lasted about 3 hours. Consonant with the service goals of the project, all those in need were given referrals for further care.

Supplementary information was obtained from the schools for the year prior to and the year of the interview about grade placement, achievement test scores, grades, special disabilities, absences and other school-related problems.

During the 2 years of the study, interviews were conducted with 752 young people, 83 percent of those selected for participation. They came from a cross-section of households in central Harlem in which adults had been interviewed as part of the larger community survey. Nearly 90 percent of the sample were black; the others came from Spanish-speaking white families. Five hundred fifty six (74%) of those interviewed were also examined. The 12 to 15-year-olds were represented in both years of the study; the 16 to 17-year-olds only in the second year. The emphasis in the report was on the 542 black youths 12 to 15 years old, since their numbers were large enough for reliable statistics regarding their health problems and health behavior. Findings for the smaller group of 16 to 17-year-old black youth were analyzed separately.

Personal and family characteristics of subjects who did not participate in the examination were carefully reviewed. Only 15 percent of those who failed to come for their examination appointments were outright refusals. The unusually high rate of participation in an age and economic group thought to be indifferent to health matters was attributed to convenient scheduling of special clinics as well as to willing and flexible rescheduling of appointments. The single most important factor in participation was the age of the subject -- cooperation with the study was far better among the younger than older adolescents.

Health Status

Results of the self and medical evaluation of current health status focus on the 12 to 15-year-old black youths who were represented in sufficient numbers over the 2-year period. In addition to the personal interview, a long checklist of problems was used in the self-evaluation of health.

In the general appraisal, one third of the 12 to 15-year-olds reported their own health as "very good"; somewhat over one-half as "pretty good" and one in fifty as "poor", with no significant differences between boys than girls. About one out of six had missed as many as 3 days of school because of illness during the month prior to the interview, and more than 2 weeks throughout the preceding year. The mean of 7 missed school days was higher than that reported for the national sample of 6 to 16-year-olds. (See Chapter II). About 10 percent felt that their health status limited what they could do in school, and 5 percent reported that their ill health restricted their

voluntary activities. Three out of four reported at least one of the medical problems about which they were questioned, with girls more likely to report health problems than boys. The number of problems increased with age, more sharply among the girls. (Figure 1).

In order of frequency, the following were the major health problems, other than dental, reported by the 12 to 15-year-olds: (Table 105).

- Vision problems were reported by one fourth, and by a higher proportion of girls than boys. One in five said they had difficulty seeing the blackboard; one out of eight was aware of a vision problem that needed correction.

- Respiratory problems ranked second for the group as a whole. One fifth reported having frequent colds, again more girls than boys; one eighth reported frequent sore throats. One out of ten reported chest pains and as many reported long lasting coughs and asthma or wheezing. One in 12 reported sinus trouble; one in 20 frequent earaches.

- Repeated headaches were reported by almost one in five, equally by boys and girls. However, headaches ranked second as a problem among boys, sixth among girls.

- Nervous or emotional problems were reported by one out of six and by girls more often than boys. The problems encompassed general nervousness, shaking or trembling, anger, fears or worries. Psychosomatic symptoms were also more prevalent among girls than boys. Boys and girls did not differ on items that gauged self-esteem -- self-deprecating responses ranged from 10 to 25 percent, depending on the item. However, almost half agreed they felt useless at times, girls more often than boys.

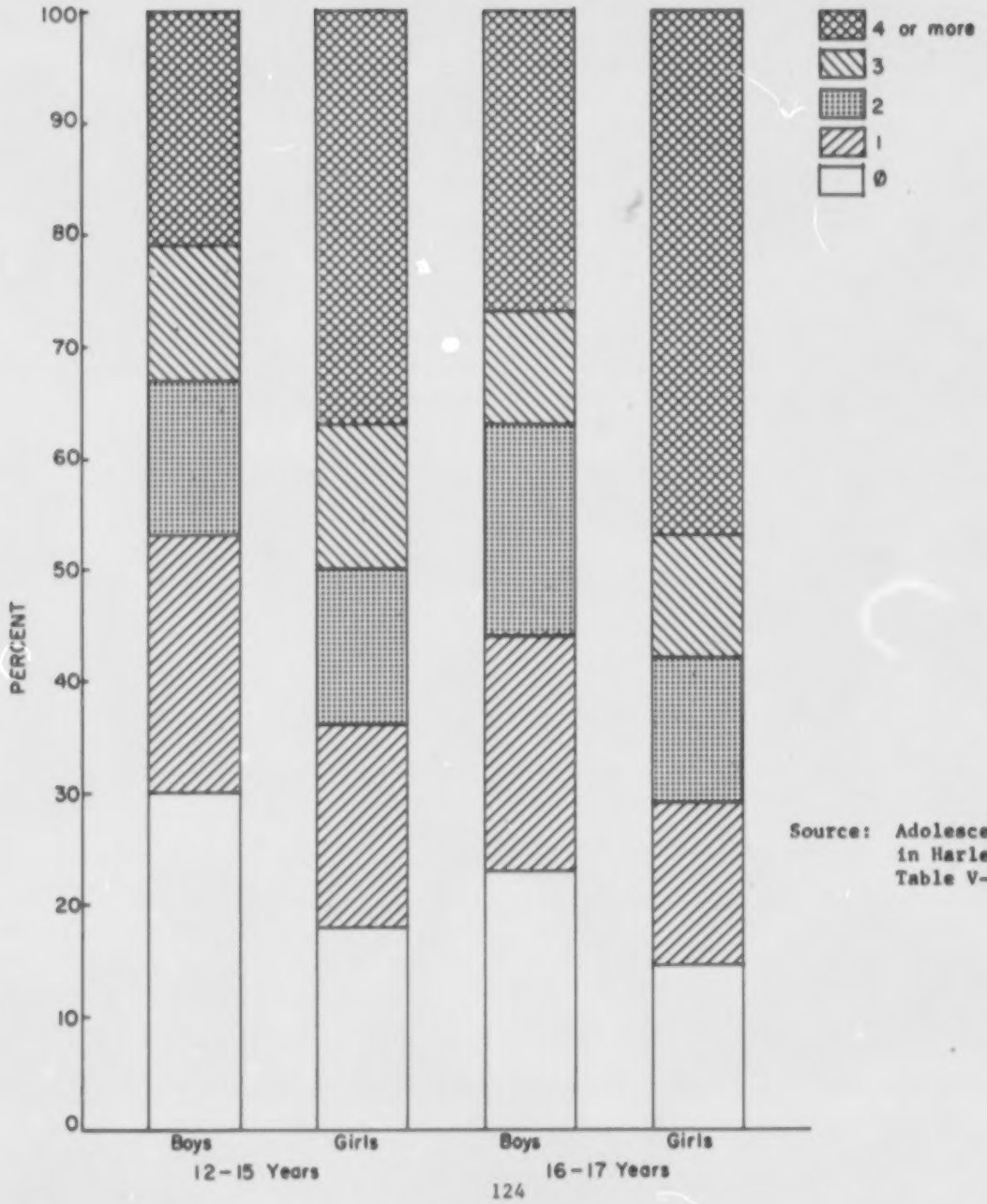
- Stomach pains were reported by one out of six, again more often by girls than boys.

- Skin problems were reported by one in seven, and by four times as many girls than boys.

- Speech problems were reported by one in eight, with no sex difference.

Other problems, reported by 10 percent or less of the youths, included repeated nose bleeds, vomiting, hay fever or other allergies, shortness of breath, backaches, dizziness and fainting.

Fig. VII-1. Frequency of self-reported problems (from personal interviews) among black youths 12-17 years of age: United States, Central Harlem, 1968-1970.



Source: Adolescent Health in Harlem, Table V-4, page 24.

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The older adolescents (16 to 17 years) were included only in the second year and were fewer in numbers -- 52 boys and 74 girls were interviewed. They largely listed the same health problems as the younger group, but every problem increased in prevalance with age.

The proportion of older boys reporting two or more health problems was 56 percent, compared to 47 percent among the 12 to 15-year-olds; and of older girls was 71 percent compared to 64 percent among the younger. (Figure 1).

Although the number of health problems observed in the medical examination of the 12 to 15-year-olds was smaller than the number reported in the interviews, there was remarkable agreement between the self and physician evaluations. (Figure 2).

Significant findings from the medical examination, again in order of frequency, for the 421 12 to 15-year-olds (78% of those who had been interviewed) were: (Table 106).

- Vision and eye problems were noted for one fifth of the group, with no difference between boys and girls.

- Respiratory tract disorders, which included transient upper respiratory infections and other respiratory conditions, were observed in one sixth of the sample, with little sex difference.

- Heart and blood pressure abnormalities were noted for one sixth of the sample, and again in equal proportion for boys and girls.

- Skin and complexion problems were severe enough to be significant for one tenth of the sample; the proportion among girls was twice that among boys.

- Nervous and emotional problems were considered significant among one out of 12 (11% of girls, 6% of boys).

- Nutritional problems which were significant and/or treatable, chiefly obesity, were observed among 7 percent of the youths, with no sex difference.

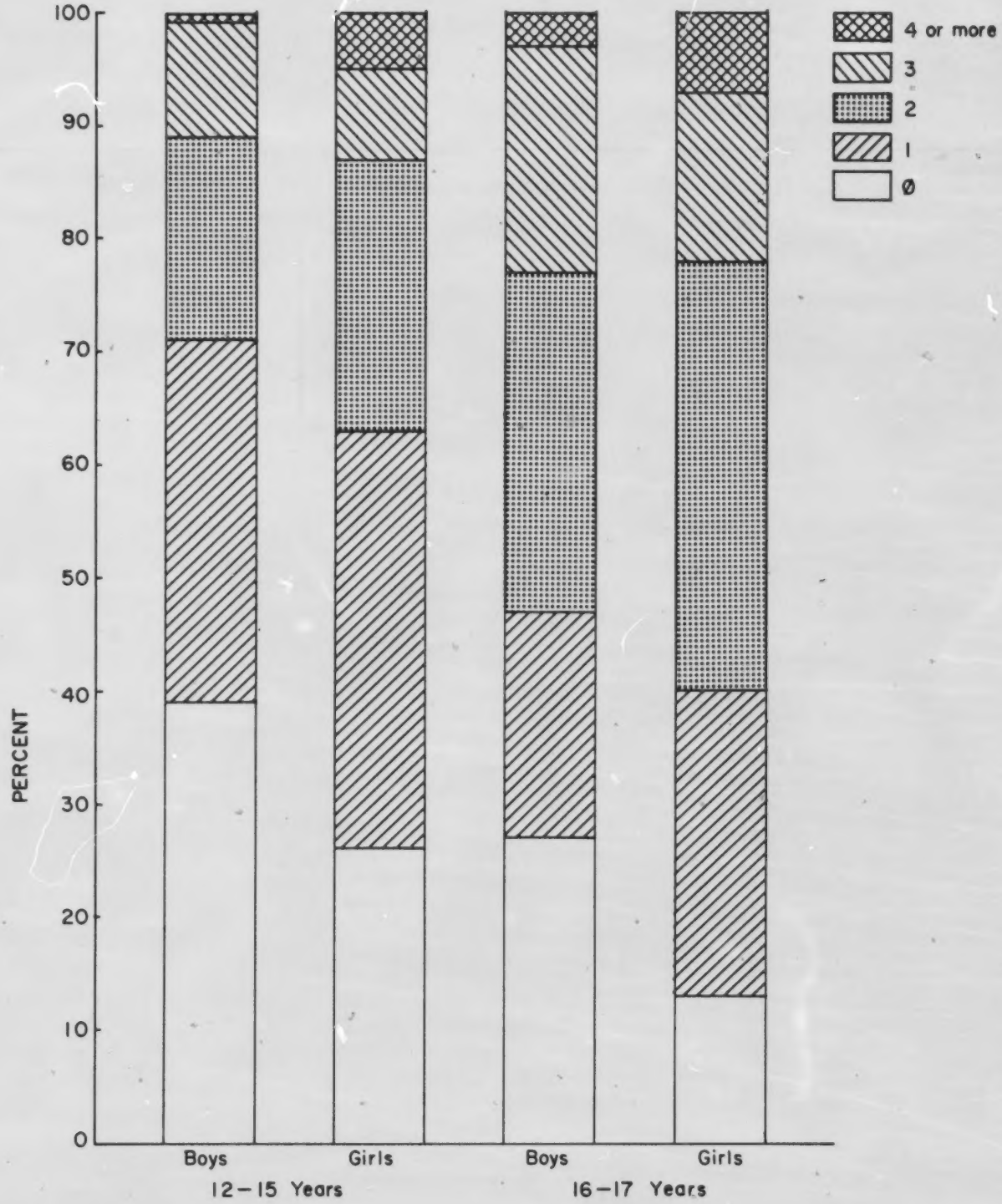
- Neuromuscular and musculoskeletal disorders were noted for 7 percent and equally for boys and girls.

- Blood disorders, most commonly anemia, were diagnosed for 4 percent of those examined, twice as frequently for girls than boys.

- Urinary problems were observed among 4 percent, three times as many girls as boys.

- Speech problems were significant among 3 percent.

Fig. VII-2. Frequency of physician-noted medical conditions (from medical examinations) among adolescent black youths 12-17 years of age: Central Harlem, 1968-1970.



Source: Adolescent Health in Harlem, Table V-5, page 25.

Seventy-six (30 boys and 46 girls) or 60 percent of the 16 to 17-year-olds who were interviewed, were also examined. The physicians' evaluation confirmed the youths' self-reports in noting more health problems than for the younger group. (Figure 2). Two or more problems were identified by the physicians for 53 percent of the boys and 60 percent of the girls. In the older group, only 27 percent of the boys and 13 percent of the girls were judged by the physician to be free of any significant deviation from normal. For both sexes, the medical examination indicated an increase in vision, lung and bronchial, skin, nervous and emotional problems and anemia; and for girls, an increase in gynecological problems, including pregnancy and menstrual difficulties.

Half of all youth examined had at least one problem which physicians referred for further care (54% of all female adolescents, 45% of all males); one fifth had at least two conditions for which they were referred. (Table 107). The most frequent problems requiring referral for care were vision problems, heart and blood pressure problems, respiratory disorders, nervous and emotional problems, and skin problems, in that order.

By far the most prevalent of all health problems among the adolescents of all ages in this study were dental problems and the need for dental care. Eighty-six percent were given dental referrals for at least one condition. Conditions requiring dental referral included caries (81%), oral hygiene (55%), gingivitis or periodontal disease (40%) and malocclusion (23%). Unlike medical problems, the prevalence of dental problems was greater among the younger than older youths.

Somewhat more than half (57%) of the adolescents reported that they had visited a dentist within 1 year prior to the interview. Two in three (66%) reported that they generally visited a dentist at least once a year, and 7 percent reported that they had never seen a dentist.

Health Attitudes and Behavior

The interviews conducted with the young people of Harlem also gauged their views on community health problems, and their own health attitudes and practices.

Drug abuse, smoking, drinking and unsanitary living conditions were the dominant concerns cited by the 12 to 15-year-olds when asked, "What do you see as some of the biggest health or medical problems for young people like yourself living around here?" Their own practices violated some of the professed beliefs. Although not asked about drug abuse, 1 percent voluntarily mentioned using drugs. Among the 12 to 15-year-olds, one out of six smoked. Both the proportion of smokers and the number of cigarettes smoked increased markedly by 16 and 17 years, to 50 percent of the boys and 62 percent of the girls. More

younger girls than boys (20% and 12%) drank alcoholic beverages; among the older youths, drinking was more prevalent among boys than girls (56% and 34%).

As for attributes associated with good health, physical activity was the most salient, mentioned by four out of ten. Good physique, bodily appearance - both strength and weight - a proper and well-balanced diet, resistance to diseases, were other important facets of the youths' definition of good health. Physical activity was most often mentioned as one of the things they did for their own good health. While most believed that being healthy was a matter of taking proper care of themselves, they nonetheless anticipated considerable illness in their lifetime and more than half believed there was little they could do to avoid illness.

The personal interviews also elicited information on the utilization of health services. Almost half of the 12 to 15-year-olds said they had seen a physician within 6 months prior to their interview; 70 percent had visited a physician at least once in the preceding year; and only one in ten had not seen a physician within the past 2 years.

When asked to estimate the number of times they had visited a physician during the year prior to the interview, about 50 percent had seen a physician two or more times, 25 percent once and an additional 10 percent at least once but could not recall the number of times. Consistent with their greater number of health problems, girls reported more physician visits than boys (3.5 and 2.7, respectively) for the year prior to the interview.

A third of the children reported using the services of one physician regularly, a third had a "usual" source of care, and the remaining one third did not.

Although the number of physician visits among the Harlem young people was as high or higher than that reported for national samples, less than half had sought care for the health problems they mentioned in the interviews. The likelihood of seeing a physician was related to the nature of the problem. Adolescents tended more often to visit physicians for respiratory or skin problems than other kinds of health problems. (Table 108).

In general, the 16 to 17-year-olds were more likely than the younger adolescents to have visited a physician during the 6 months prior to the interview, but also were more likely to have sought medical consultation for at least one of the medical problems they reported. Older boys, but not girls, were less likely than their younger counterparts to have a "usual" source of medical care.

Summary

The cooperation of the young people of Harlem in this study of their health, health attitudes and behavior, their positive reactions to the interview and examination, and their reported use of physicians and other medical facilities suggest that their own health is a matter of concern to them. Moreover, they proved to be accurate informants about themselves, both in terms of the number and nature of problems they reported.

Despite a relatively high number of medical visits, many young people had not seen a doctor about their complaints. A large number required referral and followup of conditions identified at the time of the medical examination. Dental problems were not only the most common but also the least attended to.

The greater willingness to cooperate on the part of the younger subjects highlighted the urgency for reaching youths early in their teens, especially since health problems increase with age.

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VIII. COMPARISONS AND SUMMARY

The intent of this report was to compile scattered and not readily accessible information about the health of children in the United States and to provide a sequel to the 1963 Children's Bureau publication Illness Among Children. This final chapter is a summary and, to the extent possible, a comparison of recent data to those of 10 to 15 years ago.

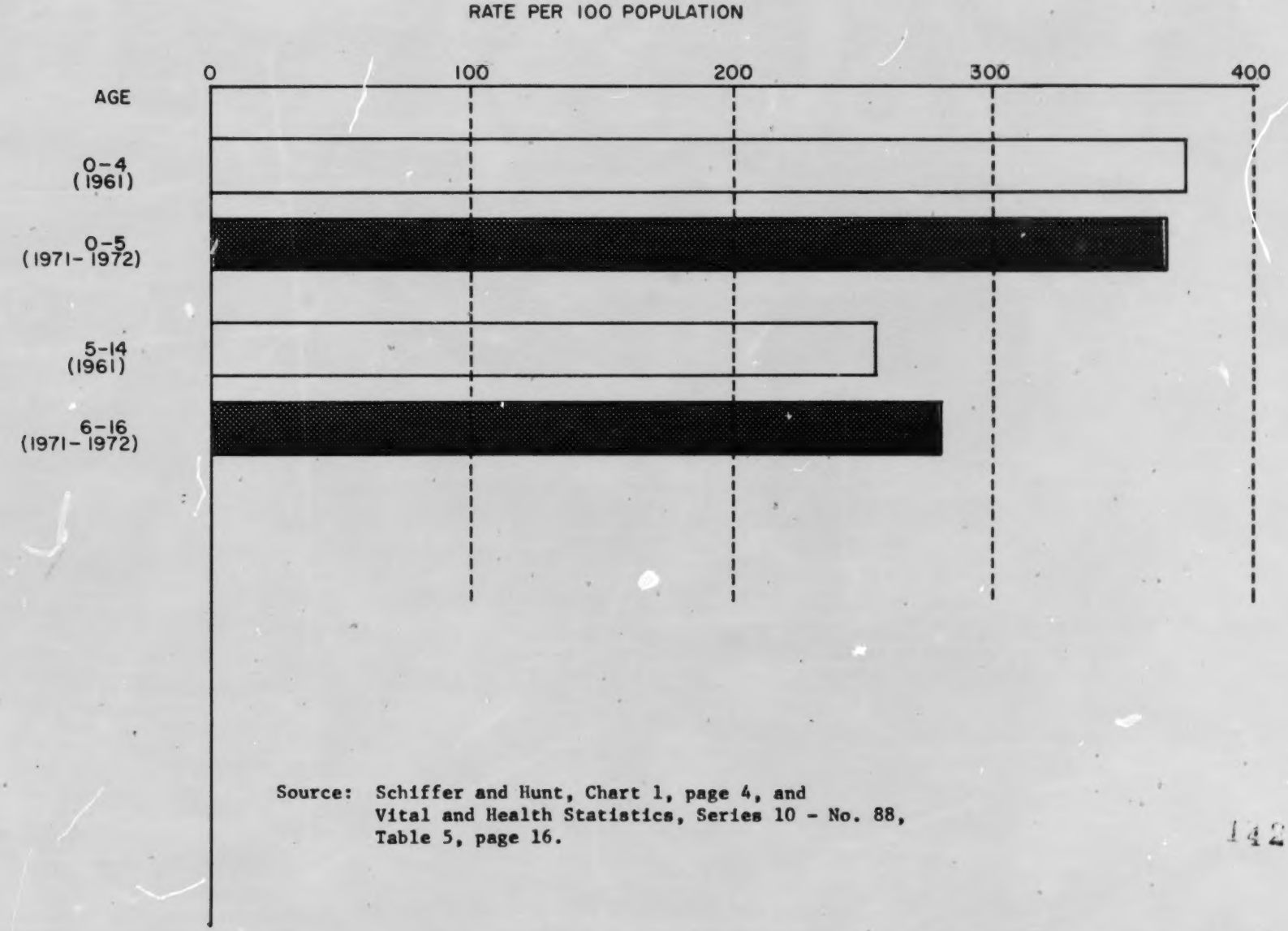
The Health Interview Survey results of more than 10 years later was remarkably unchanged. At both times -- 1959 to 1961 and 1971 to 1972 -- and for all children and youths, the average number of acute illnesses was about three a year. The rates were higher for younger than older children. (Figure 1). The toll acute illnesses took in the number of days of restricted activity and confinement and, for older children, days missed from school, was also remarkably similar for the two periods -- 10 days of restricted activity for each child a year, with 4 of the 10 days spent in bed. Days lost from school increased from just over 4 in 1960-1961 to almost 5 in the more recent cycle (1971-1972). (Figure 2). At both times, rural children had lower rates of acute illness than urban children, and children from the South had lower rates than children from other regions.

In the decade between the two surveys there was no slackening in the volume of respiratory ailments, which continued to account for well over half of all acute conditions in childhood. (Figure 3). The high prevalence was confirmed by the Health Examination Survey (1963-1965) -- a history of serious or frequent upper respiratory infections was reported for two thirds of the children. Among Harlem adolescents (1968-1970) respiratory tract disorders ranked second as a health problem, both on self-reports and medical examination.

While injuries represented a relatively small proportion of acute conditions in 1960-1961 and 1971-1972 (11% and 13%, respectively), the absolute number of inquiries to children under 17 years increased from almost 19 million to almost 25 million in the intervening years, a true change in rate from 30 to 40 injuries for every 100 children. Similar sex and age differences were noted for both periods -- more boys and school-age children were victims of accidents or injuries than girls and preschoolers. Accidental injuries were the second leading acute condition for older boys in the recent cycle; 10 years earlier they had ranked third, behind infective and parasitic diseases. The Health Examination Survey medical histories confirmed the sex difference and the sharp rise in accidental injuries with age.

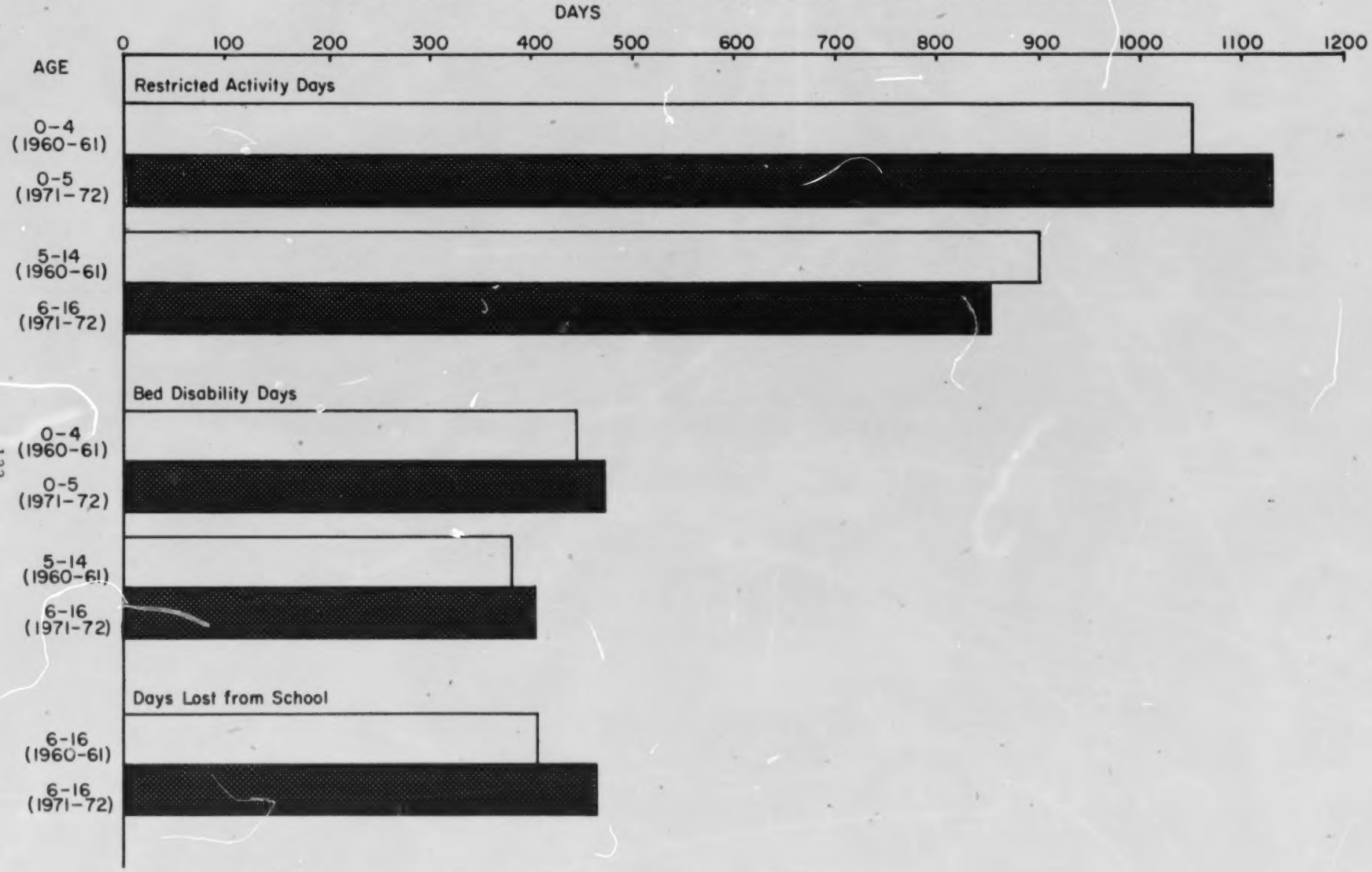
Chronic illnesses were classified by the degree of limitation they imposed on the activities of afflicted children. The absolute number of children with limiting chronic conditions had increased over time, from

Fig. VIII-1. Rate of acute conditions per 100 children by age: United States, 1961 and 1971-1972.



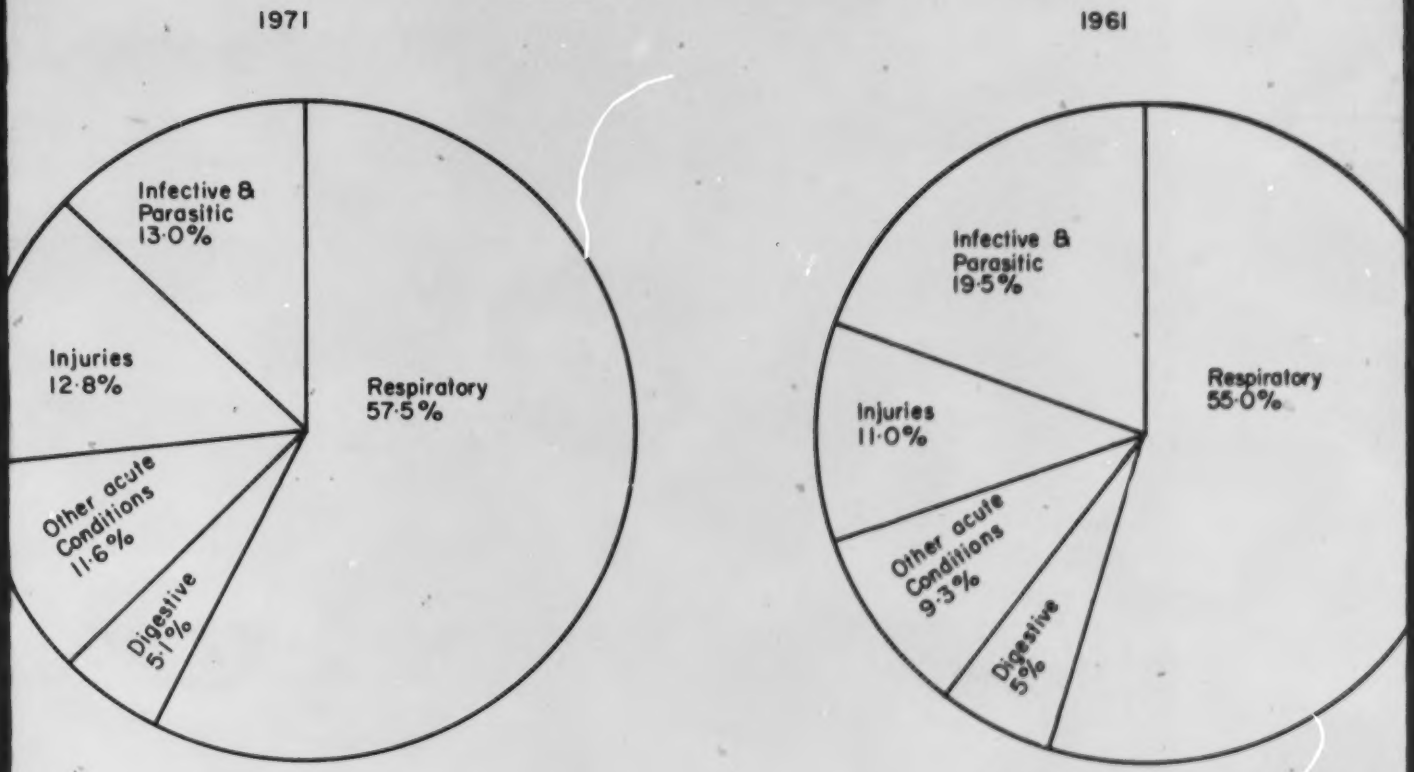
Source: Schiffer and Hunt, Chart 1, page 4, and Vital and Health Statistics, Series 10 - No. 88, Table 5, page 16.

Fig. VIII-2. Restricted activity, bed disability and missed school days due to acute conditions among children and rate per 100 children: United States, 1960-1961 and 1971-1972.



Source: Schiffer and Hunt, Tables 4 and 5, pages 63 and 64, and Vital and Health Statistics, Series 10 - No. 88, Tables 6, 7 and 8, pages 17, 18 and 19.

Fig. VIII-3. Percent distribution of acute conditions among children under 15 years (1960-1961) and under 17 years (1971-1972): United States.



Source: Schiffer and Hunt, Chart 1, page 4, and Vital and Health Statistics, Series 10 - No. 88, Table 5, page 16.

1,120,000 to 1,791,000. These numbers exclude the children with illnesses that are not restrictive of activities and children who are so severely disabled as to require institutional or residential treatment.

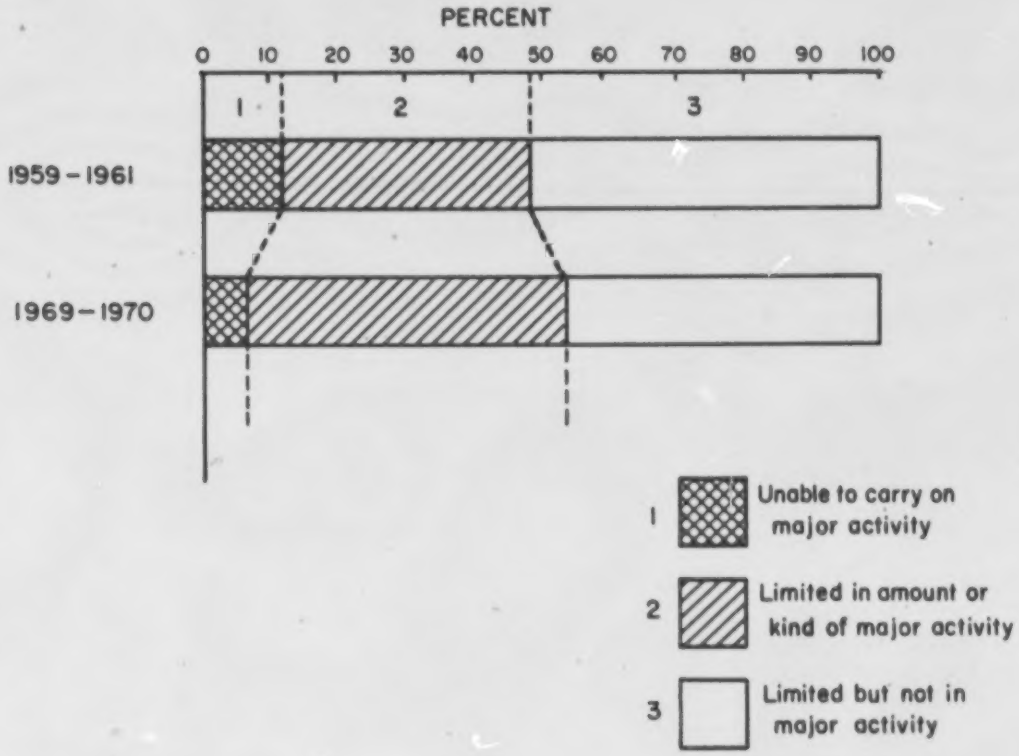
In the more recent survey year (1969-1970) fewer chronically ill noninstitutionalized children were unable to carry on their major activity -- play for the younger, school for the older -- than in 1959-1961. (Figure 4). At both times, the prevalence of limiting chronic conditions increased with age and was greater among boys than girls. Asthma, with or without hay fever, was by far the foremost cause of activity limitation among children and youths.

For 1958 to 1960, the average number of patients under 15 years of age discharged from short-stay hospitals was 3,445,000 or a rate of 63 discharges for every 1,000 children (Schiffer and Hunt, 1963). Approximately 12 years later (1971), the Hospital Discharge Survey reported 4,029,000 discharges or a rate of 70 for every 1,000 children. Although the rates had increased, the length of stay had decreased -- from an average of 6 to less than 5 days. The reduction in length of stay had occurred mainly among children under 5 years, by far the most often hospitalized. For the preschoolers, length of stay had decreased by more than 2 days (from 7.6 to 5.3); for school-age children by only a fraction (from 4.7 to 4.3).

Similar associations with selected socioeconomic and demographic factors were found for hospitalization rates and stays in 1958-1960 and 1971. Children from upper income families were hospitalized more often than children from low income families but their stays were shorter. White children were hospitalized more often than black children and also for shorter periods. The disparity in length of stay for the two racial groups was less striking in the recent survey -- in the late fifties, average stay was 5 1/2 days for white and close to 10 days for black children, a difference of 4 1/2 days; in the 1971 Hospital Discharge Survey, the reported average stay was 4.4 days for white and 6.5 days for black children.

Respiratory conditions were the leading cause of hospitalization at both times -- in 1958-1960 they accounted for 42 percent of childhood hospitalizations, in 1971 for 33 percent. The decline in the percentage was due to a decrease in the number of tonsillectomies and/or adenoidectomies. Nevertheless, in 1971, tonsillectomies and adenoidectomies remained the leading cause for children's hospitalization and the most common surgical procedure among children. The Health Examination Survey medical histories showed that almost one out of four 6 to 11-year-olds had their tonsils and/or adenoids removed. The procedure was more often done for white than black children and for children from higher income families.

Fig. VIII-4. Children under 17 years with limitation of normal activity due to chronic conditions by degree of limitation: United States, 1959-1961; 1969-1970.


PERCENT
0 10 20 30 40 50 60 70 80 90 100
1
2
3
1959 - 1961
1969 - 1970
1 Unable to carry on major activity
2 Limited in amount or kind of major activity
3 Limited but not in major activity

Source: Schiffer and Hunt, text table, page 21, and Vital and Health Statistics, Series 10 - No. 80, Table 1, page 17.

The Health Examination Survey confirmed that hospitalization is a common experience for American children and youths -- more than a quarter of 6 to 11-year-olds had been hospitalized for 1 day or more; by 12 to 17 years, half had spent 1 or more days in the hospital.

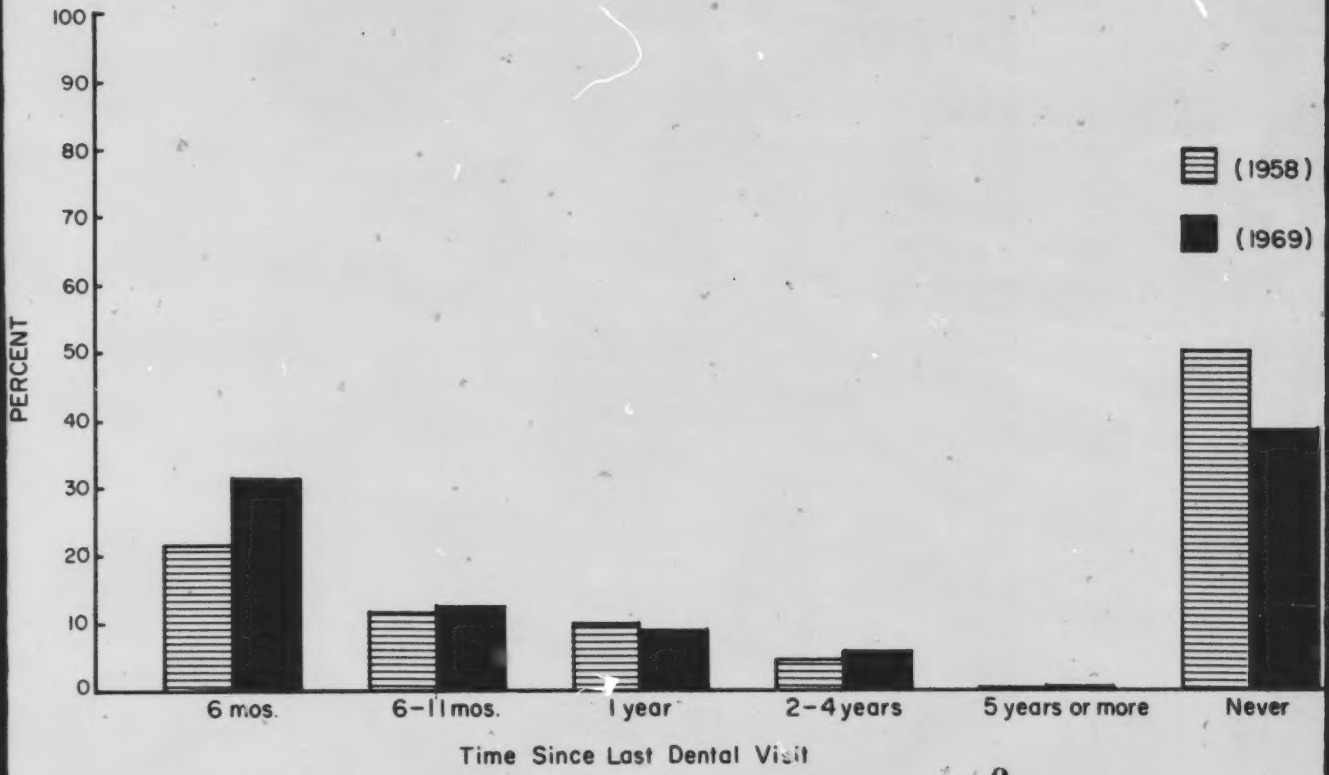
Schiffer and Hunt (1963) found "shockingly high proportions of children who had never had dental care or who are not receiving adequate dental care." Their dismay related to findings of 1957-1958 -- half of the children under 15 years of age had never visited a dentist; nine out of ten children under 5 years never had. Findings for 1969 show slight improvement -- only four out of ten children under 15 had never visited a dentist. This change was almost entirely accounted for by school-age children, for whom dental problems are most prevalent. (Figure 5). The many inequities in dental care noted in the late fifties persisted 10 years later -- the poorer care of rural children, black children, southern children, and children from economically and educationally disadvantaged families.

The heavy implication of socioeconomic and demographic factors in the adequacy of dental care was underscored by other national studies. In the children's cycle of the Health Examination Survey (1963-1965), the number of untreated decayed teeth decreased and the number of filled teeth increased as annual family income and educational level increased. Black children, who were generally less prone to decay, had more untreated decayed teeth. In the Ten-State Nutrition Survey, black and Spanish-American children had more untreated, decayed teeth than white children. In the Pre-school Nutrition Survey, children of lower socioeconomic ranks and especially black children had the highest prevalence of caries.

The Health Interview Surveys of 1969 and 1972 yielded information on physician visits but there are no comparable retrospective data. Of the high volume of physician visits, by definition including telephone contacts, three out of four were for diagnosis or treatment. There were no surprises in the analyses of socioeconomic and demographic factors and the use of medical services. White children made more visits than black children; urban children made more than rural children; and children from high income families made more than those from low income families. The parent's educational attainment was the factor most strongly linked to the number of visits, especially among young children. Those from families whose head of the household had 13 or more years of education made almost three times as many visits as those where the head of the household had gone to school for 5 years or less.

The Health and Nutrition Examination Survey, has become a continuing national nutritional surveillance system. Despite differences in evaluative techniques and sample composition, there was some overlap in findings.

Fig. VIII-5. Percent distribution of children under 15 years according to interval since last dental visit: United States, 1958 and 1969.



Source: Schiffer and Hunt, Chart 11, page 37, and Vital and Health Statistics, Series 10 - No. 76, Table 1, page 10.

Age, ethnic origin of the child, and the socioeconomic status of the family were important factors in eating patterns and kinds of foods eaten. The nutritional quality of diets, however, showed little variation in essential nutrients.

The surveys showed that substantial numbers of children and youths were poorly nourished and that insufficiency of food was the key nutritional problem. Below standard intakes, low biochemical values, multiple deficiencies and clinical signs suggestive of poor nutrition were more prevalent in low income families. While the findings for specific nutrients varied from survey to survey, the total food intake of children from low income families was much more likely to be deficient than that of their economically more advantaged peers. Although the impact of Federal food supplements on the nutrient intake of young children was negligible, the school lunch program made a significant contribution to the daily food intake of participating children.

In the Ten-State Nutrition Survey the limited total intake of children from low income families was reflected in their growth performance. The Health Examination Survey (1963-1965) confirmed the effects of socioeconomic status on the height and weight of children 6 to 11 years of age. Both growth measures were equally sensitive to socioeconomic effects. As the income of the family and the head of household's educational level increased, the physical size of children increased.

Included in this review are the results of the psychological evaluations of children and youths in the Health Examination Survey. Both intelligence and achievement testing demostrated the important effects of the environment on intellectual performance and school achievement. The socioeconomic and demographic factors correlated with intellectual performance and achievement varied from test to test and factor to factor. The strongest associations were with parental education and family income.

The psychological examination was not limited to tests and measurements but included the parent's, teacher's and the youths' own reports. There was a discrepancy between the parents' overall positive view of the children's early adjustment, development and abilities and the teachers' rating and actual school performance. Large numbers of children failed -- more in elementary than in high school, perhaps because many had left school altogether in the upper grades. Special educational services were available for less than half the children in need. The high rates of illiteracy, estimated 1 million teenagers, were additional evidence of the seriousness of learning problems.

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Table 1. Incidence of acute conditions among children under 17 years of age, percent distribution and number per 100 children per year by sex, age and condition group: United States, July 1971-June 1972.

Age and condition group	Incidence of acute conditions in thousands[1]			Number per 100 children per year			Percent distribution		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
0-16 years									
All acute conditions	202,460	102,139	100,320	307.9	305.0	310.8	100.0	100.0	100.0
Infective and parasitic diseases	26,227	12,747	13,481	39.9	38.1	41.8	13.0	12.5	13.4
Respiratory conditions	116,366	57,542	58,825	177.0	171.8	182.3	57.5	56.3	58.6
Digestive system conditions	10,401	4,767	5,633	15.8	14.2	17.5	5.1	4.7	5.6
Injuries	25,942	16,642	9,300	39.4	49.7	28.8	12.8	16.3	9.3
All other acute conditions	23,524	10,441	13,082	35.8	31.2	40.5	11.6	10.2	13.0
0-5 years									
All acute conditions	77,180	40,484	36,696	366.1	375.0	356.9	100.0	100.0	100.0
Infective and parasitic diseases	11,020	5,257	5,763	52.3	48.7	56.0	14.3	13.0	15.7
Respiratory conditions	45,186	23,792	21,394	214.4	220.4	208.1	58.5	58.8	58.3
Digestive system conditions	2,642	1,400	1,241	12.5	13.0	12.1	3.4	3.5	3.4
Injuries	8,537	5,042	3,495	40.5	46.7	34.0	11.1	12.5	9.5
All other acute conditions	9,796	4,992	4,803	46.5	46.2	46.7	12.7	12.3	13.1
6-16 years									
All acute conditions	125,280	61,655	63,624	280.4	271.7	289.3	100.0	100.0	100.0
Infective and parasitic diseases	15,207	7,490	7,718	34.0	33.0	35.1	12.1	12.1	12.1
Respiratory conditions	71,180	33,750	37,431	159.3	148.7	170.2	56.8	54.7	58.8
Digestive system conditions	7,759	3,367	4,392	17.4	14.8	20.0	6.2	5.5	6.9
Injuries	17,405	11,600	5,805	39.0	51.1	26.4	13.9	18.8	9.1
All other acute conditions	13,728	5,449	8,279	30.7	24.0	37.6	11.0	8.8	13.0

[1]Excluded are all conditions involving neither restricted activity nor medical attention.

Source: Vital and Health Statistics, Series 10 - No. 88, Table 5, page 16.

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Table 2. Incidence of acute conditions among children under 17 years of age and number per 100 children per year by place of residence, sex and age: United States, July 1971-June 1972.

Sex and age	Incidence of acute conditions in thousands[1]				Number per 100 children per year			
	All areas	SMSA	Outside SMSA		All areas	SMSA	Outside SMSA	
			Nonfarm	Farm			Nonfarm	Farm
Both sexes								
0-16	202,460	134,479	62,082	5,898	307.9	322.9	287.0	237.1
0-5	77,180	52,250	23,273	1,657	366.1	391.5	329.5	247.7
6-16	125,280	82,229	38,809	4,241	280.4	290.6	266.4	233.2
Male								
0-16	102,139	68,444	30,411	3,284	305.0	322.9	276.2	257.2
0-5	40,484	27,511	12,028	945	375.0	404.1	327.7	297.2
6-16	61,655	40,933	18,383	2,339	271.7	284.4	250.4	243.9
Female								
0-16	100,320	66,035	31,671	2,614	310.8	323.0	298.2	215.9
0-5	36,696	24,739	11,245	712	356.9	378.4	331.2	202.3
6-16	63,624	41,296	20,426	1,902	289.3	297.3	282.6	221.4

[1]Excluded from these statistics are all conditions involving neither restricted activity nor medical attention.

Source: Vital and Health Statistics, Series 10 - No. 88, Table 11, page 22.

Table 3. Incidence of acute conditions among children under 17 years of age and number per 100 children per year by geographic region, sex and age: United States, July 1971- June 1972

Sex and age	Incidence of acute conditions in thousands[1]					Number per 100 children per year				
	All regions[2]	North-east	North Central	South	West	All regions	North-east	North Central	South	West
Both sexes										
0-16	202,460	46,278	57,980	58,117	40,085	307.9	314.6	308.4	282.0	344.2
0-5	77,180	17,374	22,188	22,001	15,617	366.1	323.3	365.2	331.0	421.7
6-16	105,280	28,904	35,792	36,116	24,468	280.4	287.4	281.3	258.7	308.1
Male										
0-16	102,139	23,261	28,804	29,741	20,334	305.0	310.8	298.7	283.5	346.4
0-5	40,484	8,514	11,221	12,468	8,281	375.0	365.4	358.5	362.0	437.7
6-16	61,655	14,747	17,583	17,273	12,053	271.7	286.1	269.9	245.2	303.0
Female										
0-16	100,320	23,017	29,177	28,375	19,752	310.8	318.6	318.7	280.4	342.0
0-5	36,696	8,860	10,968	9,532	7,336	356.9	381.2	372.4	297.7	405.1
6-16	63,624	14,157	18,209	18,843	12,416	289.3	288.9	293.2	272.5	313.2

[1]Excluded are all conditions involving neither restricted activity nor medical attention.

[2]The Health Interview Survey used U.S. Bureau of the Census Regional Boundaries. See Appendix Figure 1, following Table 108 for the states included in each region.

Source: Vital and Health Statistics, Series 10 - No. 88, Table 17, page 28.

Table 4. Number of disability days associated with acute conditions among children under 17 years of age and days per 100 children per year, according to type of disability day, by sex and age: United States, July 1971 - June 1972

Sex & Age	Restricted Activity days		Bed Disability Days	
	Number of Days In Thousands	Days Per 100 Children Per Year	Number of Days In Thousands	Days Per 100 Children Per Year
Both sexes				
0 - 16	619,813	942.5	280,570	426.6
0 - 5	238,487	1,131.4	99,555	472.3
6 -16	381,326	853.4	181,015	405.1
Male				
0 - 16	309,764	925.0	135,766	405.4
0 - 5	120,391	1,115.1	49,200	455.7
6 -16	189,373	834.3	86,566	381.5
Female				
0 - 16	310,049	960.6	144,803	488.7
0 - 5	118,096	1,148.5	50,355	489.7
0 -16	191,953	872.8	94,448	429.5

Source: Vital and Health Statistics, Series 10 - No. 88, Tables 6 and 7, pages 17 and 18.

Table 5. Number of days lost from school associated with acute conditions among children 6-16 years of age, percent distribution and days lost per 100 children by sex, age and condition group: United States, July 1971-June 1972.

Condition group	Days lost from school in thousands			Percent distribution			Days lost from school per 100 children per year		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
All acute conditions	208,588	102,130	106,458	100.0	100.0	100.0	466.8	450.1	484.1
Infective and parasitic diseases	33,343	16,258	17,087	16.0	15.9	16.1	74.6	71.6	77.7
Respiratory conditions	131,461	62,874	68,586	63.0	61.6	64.4	294.2	277.1	311.9
Digestive system conditions	9,840	4,677	5,162	4.7	4.6	4.8	22.0	20.6	23.5
Injuries	15,987	10,873	5,114	7.7	10.6	4.8	35.8	47.9	23.3
All other acute conditions	17,957	7,449	10,508	8.6	7.3	9.9	40.2	32.8	47.8

Source: Vital and Health Statistics, Series 10 - No. 88, Table 8, page 19.

Table 6. Average number of children under 17 years of age and percent distribution according to activity limitation due to chronic conditions by sex and by age: United States, 1969-1970.

Sex and age	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity
	Average number of persons in thousands					Percent distribution				
0-16										
Both sexes	66,790	65,000	834	841	116	100.0	97.3	1.2	1.3	0.2
Male	33,983	33,934	492	500	57	100.0	96.9	1.4	1.5	0.2
Female	32,807	32,065	342	341	59	100.0	97.7	1.0	1.0	0.2
Both sexes										
0-5	21,883	21,480	...	338	64	100.0	98.2	...	1.5	0.3
6-16	44,907	43,520	834	502	51	100.0	96.9	1.9	1.1	0.1

... Not applicable

Activity limitation definition:

Unable to carry on major activity:

0-5: Inability to take part in ordinary play with other children.

6-16: Inability to go to school.

Limited in amount or kind of major activity:

0-5: Limited in amount or kind of play with other children.

6-16 Need special school or special teaching or cannot go to school fulltime or for long periods of time.

Limited but not in major activity:

0-5: Not applicable.

6-16: Not limited in going to school but limited in athletics or other extracurricular activities.

Source: Vital and Health Statistics, Series 10 - No. 80, Tables 1 and 9, pages 17 and 25.

Table 7. Average number of children under 17 years of age, and percent distribution according to activity limitation due to chronic conditions by family income and race: United States, 1969-1970.

Family Income and Color	Average number of persons in thousands					Percent distribution				
	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity
Total	66,790	65,000	834	841	116	100.0	97.3	1.2	1.3	0.2
White	56,431	54,923	719	692	97	100.0	97.3	1.3	1.2	0.2
All other	10,360	10,077	115	149	*	100.0	97.3	1.1	1.4	*
Less than $5000	11,765	11,318	185	226	37	100.0	96.2	1.6	1.9	0.3
White	7,240	6,939	118	155	*	100.0	95.8	1.6	2.1	*
All other	4,525	4,379	66	71	*	100.0	96.8	1.5	1.6	*
$5000 or more	51,393	50,144	601	578	71	100.0	97.6	1.2	1.1	0.1
White	46,256	45,122	557	512	66	100.0	97.5	1.2	1.1	0.1
All other	5,138	5,022	44	66	*	100.0	97.7	0.9	1.3	*

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 80, Tables 4, 5 and 6, pages 20, 21 and 22.

Table 8. Average number of children under 17 years of age and percent distribution according to activity limitation due to chronic conditions by family income: United States, 1969-1970.

Income	Average number of persons in thousands					Percent distribution				
	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity	Total population	No activity limitation	Limited, but not in major activity	Limited in amount or kind of major activity	Unable to carry on major activity
All Incomes [1]	66,790	65,000	834	841	116	100.0	97.3	1.2	1.3	0.2
Less than $3000	4,817	4,615	72	113	*	100.0	95.8	1.5	2.3	*
$3000-4999	6,948	6,703	113	113	*	100.0	96.5	1.6	1.6	*
$5000-6999	10,515	10,239	111	148	*	100.0	97.4	1.1	1.4	*
$7000-9999	15,329	14,967	179	159	*	100.0	97.6	1.2	1.0	*
$10,000-14,999	16,663	16,248	208	187	*	100.0	97.5	1.2	1.1	*
$15,000 or more	8,886	8,691	103	84	*	100.0	97.8	1.2	0.9	*

[1] Includes unknown income.

* Figure does not meet standards of reliability and precision.

Source: Vital and Health Statistics, Series 10 - No. 80, Tables 2 and 3, pages 18 and 19.

Table 9. Number of physician visits among children under 17 years of age by sex and percent of physician visits by sex, and source of payment of bill; United States, 1972.

Source of payment [1]	Total	Male	Female
	Number of visits in thousands [2]		
	264,573	137,433	127,140
	Number of visits per child per year		
	4.1	4.2	4.0
		Percent	
Insurance and other	16.0	17.5	14.4
Insurance only	8.5	9.5	7.5
Self or family and other	55.8	55.8	55.8
Self or family only	48.1	47.4	48.8
Insurance, self or family, and other	7.2	7.7	6.7
Insurance and self or family only	7.2	7.7	6.7
Medicare and other	....	....	....
No charge	16.6	16.0	17.4

[1] The summation of all sources shown in table does not equal 100 percent since sources are not mutually exclusive and all possible sources are not shown. Later reports will show additional sources such as Medicaid or welfare.

[2] A visit is defined as a consultation in person or by telephone for examination, diagnosis, treatment or advice and does not include inpatient hospital visits.

.... Not applicable.

Source: Vital and Health Statistics, Series 10 - No. 85, Table 27, page 33.

Table 10. Number of physician visits among children under 15 years of age and number of visits per child per year by age and type of service: United States, 1969

Type of Service	Number of Visits[2] in Thousands			Number of Visits[2] per child per year		
	Total	0 - 4	5-14	Total	0 - 4	5 - 14
All visits [1]	217,550	103,406	114,144	3.7	5.7	2.8
Diagnosis and treatment	162,876	73,438	89,438	2.8	4.1	2.2
General Check Up	25,480	14,282	11,198	0.4	0.8	0.3
Immunization and Vaccination	20,060	13,509	6,551	0.3	0.7	0.2
All other	14,674	6,212	8,462	0.2	0.3	0.2

[1] The sum of visits by type of service may be greater than the total visits since one visit may involve more than one type of service.

[2] A visit is defined as a consultation in person or by telephone for examination, diagnosis, treatment or advice and does not include inpatient hospital visits.

Source: Vital and Health Statistics, Series 10 - No. 75, Table 18, page 32.

Table 11. Number and percent distribution of physician visits among children under 15 years of age by place of visit and age, United States, 1969.

Place of visit	Number of visits in thousands			Percent distribution		
	0-14	0-4	5-14	0-14	0-4	5-14
Total	217,550	103,406	114,144	100.0	100.0	100.0
Office (including prepaid group)	131,936	60,935	71,001	60.6	58.9	62.2
Home	3,467	1,519	1,948	1.6	1.5	1.7
Hospital clinic or Emergency Room	26,017	11,342	14,675	12.0	11.0	12.9
Company or industry health unit	*	*	*	*	*	*
Telephone	44,260	24,240	20,020	20.3	23.4	17.5
Other and unknown	11,441	5,285	6,156	5.3	5.1	5.4

*Figure does not meet standards of reliability and precision.

Source: Vital and Health Statistics, Series 10 - No. 75, Tables 13 and 14, pages 27 and 28.

Table 12. Number of physician visits among children under 15 years of age, and number of visits per child per year, by race, sex, and age, United States, 1969.

Sex and age	Number of visits in thousands			Number of visits per person per year		
	Total	White	All other	Total	White	All other
Both sexes						
0-14	217,550	194,346	23,204	3.7	3.9	2.5
0-4	103,406	91,143	12,263	5.7	6.1	4.0
5-14	114,144	103,203	10,941	2.8	2.9	1.8
Male						
0-14	116,468	105,091	11,377	3.9	4.1	2.5
0-4	54,926	49,057	5,869	6.0	6.4	3.8
5-14	61,542	56,034	5 508	2.9	3.1	1.8
Female						
0-14	101,081	89,255	11,827	3.5	3.7	2.6
0-4	48,479	42,086	6,394	5.5	5.8	4.2
5-14	52,602	47,169	5,433	2.6	2.8	1.8

Source: Vital and Health Statistics, Series 10 - No. 75, Table 7, page 20.

Table 13. Number of physician visits among children under 15 years of age and number of physician visits per child per year by residence, sex, and age, United States, 1969.

Sex and age	Number of visits in thousands				Number of visits per child per year			
	All areas	SMSA	Outside SMSA		All areas	SMSA	Outside SMSA	
			Nonfarm	Farm			Nonfarm	Farm
Both sexes								
0-14	217,550	151,783	59,935	5,832	3.7	3.9	3.3	2.3
0-4	103,406	73,147	27,979	2,280	5.7	6.1	5.1	4.2
5-14	114,144	78,636	31,956	3,552	2.8	3.0	2.5	1.7
Male								
0-14	116,468	81,291	32,586	2,591	3.9	4.1	3.5	2.0
0-4	54,926	39,501	14,515	*	6.0	6.5	5.0	*
5-14	61,542	41,790	18,071	1,681	2.9	3.1	2.8	1.7
Female								
0-14	101,081	70,491	27,349	3,241	3.5	3.7	3.1	2.5
0-4	48,479	33,646	13,464	1,369	5.5	5.7	5.1	5.0
5-14	52,602	36,845	13,885	1,872	2.6	2.8	2.2	1.8

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 75, Table 3, page 16.

Table 14. Number of physician visits among children, under 15 years of age and number of physician visits per child per year by region, sex, and age, United States, 1969.

Sex and Age	Number of visits in thousands					Number of visits per child per year				
	All Regions	North-east	North Central	South	West	All Regions	North-east	North Central	South	West
Both Sexes										
0-14	217,550	56,208	56,085	67,173	38,082	3.7	4.0	3.3	3.7	3.8
0-4	103,406	27,079	25,195	32,393	18,738	5.7	6.3	5.0	5.8	6.1
5-14	114,144	29,129	30,890	34,780	19,344	2.8	3.0	2.6	2.8	2.8
Male										
0-14	116,468	30,404	28,996	36,356	20,712	3.9	4.3	3.3	3.9	4.0
0-4	54,926	14,720	12,375	17,631	10,200	6.0	6.8	4.9	6.1	6.3
5-14	61,542	15,684	16,621	18,725	10,512	2.9	3.2	2.7	2.9	3.0
Female										
0-14	101,081	25,803	27,089	30,818	17,371	3.5	3.8	3.2	3.4	3.6
0-4	48,479	12,358	12,820	14,763	8,538	5.5	5.9	5.1	5.4	5.8
5-14	52,602	13,445	14,269	16,055	8,833	2.6	2.9	2.4	2.6	2.6

Source: Vital and Health Statistics, Series 10 - No. 75, Table 4, page 17.

Table 15. Number of physician visits among children under 15 years of age and number of visits per child per year by education of head of family, sex, and age, United States, 1969.

Sex and age	Education of head of family					
	All groups[1]	Less than 5 years	5-8 years	9-11 years	12 years	13 years or more
	Number of visits in thousands					
Both sexes						
0-14	217,550	6,081	22,315	36,134	76,973	74,041
0-4	103,406	1,891	9,729	16,106	38,417	36,351
5-14	114,144	4,190	12,586	20,028	38,556	37,698
Male						
0-14	116,468	2,810	11,530	20,101	40,648	39,829
0-4	54,926	*	4,740	8,758	19,551	20,344
5-14	61,542	1,995	6,790	11,343	21,097	19,485
Female						
0-14	101,081	3,271	10,785	16,033	36,324	34,220
0-4	48,479	1,076	4,989	7,347	18,866	16,007
5-14	52,602	2,195	5,296	8,686	12,458	18,213
	Number of visits per child per year					
Both sexes						
0-14	3.7	2.3	2.3	3.1	3.9	5.0
0-4	5.7	2.8	3.9	4.7	5.9	7.7
5-14	2.8	2.3	1.8	2.4	2.9	3.8
Male						
0-14	3.9	2.3	2.4	3.4	4.0	5.2
0-4	6.0	*	3.7	5.0	6.0	8.1
5-14	2.9	2.2	1.9	2.7	3.1	3.8
Female						
0-14	3.5	2.6	2.3	2.7	3.7	4.8
0-4	5.5	3.1	4.0	4.3	5.8	7.2
5-14	2.6	2.4	1.7	2.1	2.6	3.8

[1] Includes unknown education.

* Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 75, Tables 9 and 10, pages 22 and 23.

Table 16. Number of physician visits among children under 15 years of age, and number of physician visits per child per year by family income, sex, and age, United States, 1969.

Sex and age	Family income						
	All incomes[1]	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000 $14,999	$15,000 and over
	Number of visits in thousands						
Both sexes							
0-14	217,550	12,406	18,711	34,581	54,742	60,147	29,831
0-4	103,406	6,710	10,134	19,744	28,575	25,194	9,544
5-14	114,144	5,696	8,577	14,837	26,167	34,953	20,287
Male							
0-14	116,468	6,335	9,901	17,876	30,017	33,408	15,214
0-4	54,926	3,353	5,087	10,329	15,666	13,815	4,932
5-14	61,542	2,982	4,814	7,547	14,351	19,593	10,282
Female							
0-14	101,081	6,071	8,810	16,703	24,725	26,739	14,617
0-4	48,479	3,357	5,047	9,414	12,910	11,379	4,612
5-14	52,602	2,714	3,763	7,289	11,815	15,360	10,005
	Number of visits per child per year						
Both sexes							
0-14	3.7	2.8	2.9	3.3	3.8	4.2	4.4
0-4	5.7	4.2	4.6	5.2	6.1	6.7	7.1
5-14	2.8	2.0	2.0	2.2	2.7	3.4	3.7
Male							
0-14	3.9	2.9	3.0	3.4	4.1	4.6	4.3
0-4	6.0	4.2	4.6	5.3	6.8	7.0	7.0
5-14	2.9	2.1	2.2	2.3	2.9	3.2	3.6
Female							
0-14	3.5	2.7	2.7	3.2	3.5	3.9	4.5
0-4	5.5	4.2	4.6	5.2	5.5	6.3	7.2
5-14	2.6	1.9	1.2	2.2	2.5	3.0	3.9

[1] Includes unknown income.

Source: Vital and Health Statistics, Series 10 - No. 75, Tables 5 and 6, pages 18 and 19.

Table 17. Number of physician visits among children under 15 years of age and number of visits per child per year, by income and education of head of family, United States, 1969.

Education of head of family	Income					
	All incomes[1]	<$5,000	≥$5,000	All incomes	<$5,000	≥$5,000
	Number of visits in thousands			Number per child per year		
All groups[2]	217,549	31,116	179,301	3.7	2.8	3.9
Less than 5 years	6,081	2,830	2,426	2.4	2.1	2.4
5-8 years	22,315	8,211	13,108	2.3	2.3	2.4
9-11 years	36,134	7,909	27,554	3.1	2.7	3.3
12 years	76,972	9,113	65,473	3.9	3.8	3.9
13 years or more	74,049	2,523	69,781	5.0	4.4	5.1

[1] Includes unknown income.
[2] Includes unknown education.

Source: Viral and Health Statistics, Series 10 - No. 75, Table 11, page 24.

Table 18. Number of physicians visits among children under 15 years of age, and Number of Visits per child per year, by race and family income, United States, 1969.

Income	Number of visits in thousands			Number of visits per child per year		
	Total	White	All Other	Total	White	All Other
All incomes[1]	217,549	194,346	23,204	3.7	3.9	2.5
Less than $5000	31,116	21,927	9,189	2.8	3.3	2.1
$5000 or more	179,301	166,412	12,890	3.9	4.0	2.9

[1]Includes unknown income.

Source: Vital and Health Statistics, Series 10 - No. 75, Table 8, page 21.

Table 19. Number of dental visits among children under 15 years of age and number of visits per child per year by race, family income and age, United States, 1969.

Family income and age	Number of visits in thousands			Number of visits per child per year		
	Total	White	All other	Total	White	All other
All income[1]						
0-14	80,026	75,038	4,988	1.4	1.5	0.5
0-4	5,267	5,089	*	0.3	0.3	*
5-14	74,759	69,949	4,810	1.8	2.0	0.8
Less than $5,000						
0-14	7,278	5,568	1,710	0.7	0.8	0.4
0-4	*	*	*	*	*	*
5-14	6,705	5,032	1,673	0.9	1.2	0.6
$5,000 or more						
0-14	68,651	65,818	2,833	1.5	1.6	0.6
0-4	4,476	4,379	*	0.3	0.4	*
5-14	64,175	61,439	2,736	2.0	2.1	0.9

[1] Includes unknown income.

* Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 4, page 13.

Table 20. Number of dental visits among children under 15 years of age, and number of visits per child per year by family income and age: United States, 1969.

Age	Family Income						
	All incomes[1]	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,0000-$9,999	$10,0000-$14,999	$15,000 or more
	Number of visits in thousands						
0-14	80,026	2,338	4,940	8,961	17,714	24,252	17,723
0-4	5,267	*	*	*	1,466	1,622	*
5-14	74,759	2,195	4,510	8,026	16,248	22,630	17,270
	Number of visits per child per year						
0-14	1.4	0.5	0.8	0.9	1.2	1.7	2.6
0-4	0.3	*	*	*	0.3	0.4	*
5-14	1.8	0.8	1.0	1.2	1.7	2.2	3.?

[1]Includes unknown income.

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 6, page 15.

Table 21. Number of dental visits among children under 15 years of age, and number of visits per child per year, by education of head of family and age: United States, 1969.

Age	Education of head of family					
	All groups[1]	Less than 5 years	5-8 years	9-11 years	12 years	13 years or more
	Number of visits in thousands					
0-14	80,026	*	8,166	14,116	27,060	29,239
0-4	5,267	*	*	*	2,126	1,994
5-14	74,759	*	8,010	13,128	24,934	27,245
	Number of visits per child per year					
0-14	1.4	*	0.9	1.2	1.4	2.0
0-4	0.3	*	*	*	0.3	0.4
5-14	1.8	*	1.1	1.6	1.8	2.7

[1]Includes unknown education.

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 1, page 10.

Table 22. Number of dental visits among children under 15 years of age and number of visits per child per year by place of residence and age: United States, 1969.

Age	Place of Residence							
	All areas	SMSA	Outside SMSA		All areas	SMSA	Outside SMSA	
			Nonfarm	Farm			Nonfarm	Farm
	Number of visits in thousands				Number of visits per child per year			
0-14	80,026	58,063	18,718	3,244	1.4	1.5	1.0	1.3
0-4	5,267	3,681	1,477	*	0.3	0.3	0.3	*
5-14	74,759	54,382	17,241	3,135	1.8	2.0	1.4	1.5

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 9, page 18.

Table 23. Number of dental visits among children under 15 years of age and number of visits per child per year by region and age: United States, 1969.

Age	Region									
	All regions	North-east	North-Central	South	West	All regions	North-east	North-Central	South	West
	Number of visits in thousands					Number of visits per child per year				
0-14	80,026	23.174	23,317	16,308	17,226	1.4	1.7	1.4	0.9	1.7
0-4	5,267	1,508	1,849	1,004	*	0.3	0.4	0.4	0.2	*
5-14	74,759	21,666	21,468	15,304	16,321	1.8	2.3	1.8	1.2	2.4

*Fipure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 10, page 19.

Table 24. Number of children under 15 years of age and percent distribution according to time interval since last dental visit by age: United States, 1969.

Time interval since last dental visit	Number of children in thousands			Percent distribution		
	Total	0-4	5-14	Total	0-4	5-14
All children	59,205	18,052	41,153	100.0	100.0	100.0
Less than 6 months	18,671	1,421	17,250	31.5	7.9	41.9
6-11 months	7,525	573	6,952	12.7	3.2	16.9
1 year	5,354	289	5,065	9.0	1.6	12.3
2-4 years	3,419	77	3,342	5.8	0.4	8.1
5 years or more	458	...	458	0.8	...	1.1
Never	22,863	15,486	7,377	38.6	85.8	17.9
Unknown	915	205	710	1.5	1.1	1.7

... Not applicable.

Source: Vital and Health Statistics, Series 10 - No. 76, Table 5, page 14.

Table 25. Per capita out-of-pocket health expenditures in dollars on behalf of children under 17 years of age by type of expense, sex and age: United States, 1970.

Sex and age (in years)	All types of expenses[1]		Expense category						
	Including insurance premiums	Excluding insurance premiums	Health insurance premiums	Hospital	Doctor	Dental	Prescription medicine	Optical	Other
	Dollars per child								
Both sexes									
0-16	105	75	29	13	27	18	12	5	2
0-5	95	66	--	14	34	--	15	--	--
6-16	110	79	--	12	24	--	10	--	--
Male									
0-16	114	84	28	17	31	18	13	4	2
0-5	101	73	--	16	37	--	16	--	--
6-16	119	89	--	18	28	--	11	--	--
Female									
0-16	96	66	29	8	24	18	10	6	2
0-5	89	60	--	13	31	--	13	--	--
6-16	100	68	--	6	20	--	9	--	--

[1] Sum of expenses may not add to total because of differing proportion of unknown for the health expense categories.

-- Not published.

Source: Vital and Health Statistics, Series 10 - No. 91, Tables 1-9, pages 15-23.

Table 26. Average out-of-pocket health expenditures on behalf of children under 17 years of age with such expense by type of expense, sex and age: United States, 1970.

Sex and age (in years)	All types of expenses		Expense category						
	Including insurance premiums	Excluding insurance premiums	Health insurance premiums	Hospital	Doctor	Dental	Prescription medicine	Optical	Other
	Dollars per child								
Both sexes									
0-16	128	107	48	135	52	50	26	43	77
0-5	119	99	--	106	57	--	27	--	--
6-16	132	111	--	159	49	--	25	--	--
Male									
0-16	138	120	48	153	57	52	29	40	70
0-5	129	109	--	106	62	--	30	--	--
6-16	143	125	--	187	54	--	28	--	--
Female									
0-16	117	94	49	108	46	49	23	45	87
0-5	109	88	--	107	51	--	25	--	--
6-16	121	97	--	109	43	--	23	--	--

-- Not published.

Source: Vital and Health Statistics, Series 10 - No. 91, Tables 1-9, pages 15-23.

Table 27. Percentage of children under 17 years of age with health expense by expense category, sex, and age: United States, 1969.

Sex and age	All types of Expense		Expense Category (Percent of Children)						
	includes insurance premium	excludes insurance premium	Health insurance premium	Hospital	Doctor	Dental	Prescription median	Optical	Other
Both sexes									
0-16	82.0	69.8	59.5	9.4	53.1	35.5	44.4	11.6	2.3
0-5	80.3	67.4	NA	13.3	60.7	NA	53.8	NA	NA
6-16	82.8	70.9	NA	7.6	49.5	NA	40.0	NA	NA
Male									
0-16	82.0	69.8	59.5	11.2	54.1	34.9	44.3	10.5	2.8
0-5	78.6	66.7	NA	14.9	60.1	NA	53.2	NA	NA
6-16	83.6	71.2	NA	9.5	51.3	NA	40.1	NA	NA
Female									
0-16	81.9	69.8	59.5	7.5	52.1	36.0	44.6	12.6	1.9
0-5	81.9	68.1	NA	11.7	61.4	NA	54.3	NA	NA
6-16	81.9	70.7	NA	5.5	47.7	NA	39.9	NA	NA

NA = Not available.

Source: Vital and Health Statistics, Series 10 - No. 91, Tables 1-9, pages 15-23.

Table 28

Percent of children in 1963-65 and youths in 1966-70 with specified parent ratings of present health, health a worry to parents, and significant abnormal findings on survey examination, by age and sex: United States

Age, sex, and survey	Parent's rating of present health					Parent considers present health a problem	Physician's finding of significant abnormality on survey examination	Finding of otitis media examination[1]
	Excellent	Very good	Good	Fair	Poor			
	Percent							
Children								
Both sexes								
6-11 years	---	51.8	42.9	4.9	0.4	19.0	11.2	1.6
6 years	---	51.8	43.1	4.8	0.3	17.9	10.9	2.6
7 years	---	50.9	44.1	4.6	0.4	17.8	12.0	2.1
8 years	---	54.9	40.3	4.4	0.4	17.3	11.3	1.2
9 years	---	50.2	43.6	5.6	0.6	21.4	9.9	1.6
10 years	---	50.7	43.7	5.2	0.4	20.3	10.2	0.8
11 years	---	51.7	42.8	5.0	0.5	19.6	13.2	1.2
Boys								
6-11 years	---	51.6	43.2	4.8	0.4	19.0	12.2	1.8
6 years	---	50.4	45.5	3.5	0.6	19.6	13.5	2.5
7 years	---	50.5	44.0	5.2	0.3	17.7	13.2	2.8
8 years	---	54.9	39.6	5.1	0.4	16.2	10.3	1.2
9 years	---	50.1	43.8	5.6	0.5	21.6	11.1	1.9
10 years	---	52.5	42.6	4.5	0.4	18.7	10.9	0.6
11 years	---	51.2	43.8	4.7	0.3	20.5	14.4	1.4
Girls								
6-11 years	---	51.8	42.7	5.1	0.4	19.0	10.2	1.4
6 years	---	53.3	40.7	6.0	-	16.2	8.2	2.8
7 years	---	51.4	44.2	4.0	0.4	17.8	10.9	1.4
8 years	---	54.9	41.0	3.7	0.4	18.5	12.3	1.2
9 years	---	50.2	43.5	5.6	0.7	21.2	8.7	1.3
10 years	---	48.9	44.8	5.8	0.5	22.0	9.5	1.0
11 years	---	52.4	41.8	5.2	0.6	18.7	11.9	0.8
Youths								
Both sexes								
12-17 years	33.0	33.9	29.5	3.3	0.3	14.6	21.8	1.8
12 years	36.7	31.4	29.2	2.3	0.3	12.4	19.0	1.7
13 years	30.7	37.8	28.1	3.0	0.4	13.8	20.9	2.1
14 years	34.9	31.2	30.6	3.0	0.3	15.6	23.1	2.1
15 years	30.8	33.1	31.0	4.8	0.2	16.4	22.3	1.0
16 years	34.3	35.7	27.1	2.6	0.3	12.7	22.0	1.8
17 years	30.1	34.8	30.8	4.2	0.1	16.8	24.0	2.0
Boys								
12-17 years	34.4	34.5	27.7	3.2	0.2	14.6	23.0	1.8
12 years	38.5	32.3	26.7	2.1	0.4	11.0	21.6	1.7
13 years	30.6	41.6	24.6	2.8	0.4	13.9	21.9	2.2
14 years	39.5	29.3	27.8	2.9	0.5	15.7	25.4	1.4
15 years	33.0	32.7	30.6	3.5	0.2	16.3	20.6	0.7
16 years	35.1	35.6	26.4	2.9	-	12.4	21.8	2.7
17 years	28.9	35.3	30.5	5.3	-	18.9	26.8	2.0
Girls								
12-17 years	31.5	33.4	31.3	3.4	0.4	14.5	20.6	1.8
12 years	34.9	30.4	31.9	2.5	0.3	13.8	16.2	1.6
13 years	30.8	34.0	31.7	3.2	0.3	13.7	19.9	2.1
14 years	30.1	33.1	33.4	3.2	0.2	15.5	20.6	2.8
15 years	28.5	33.5	31.4	6.1	0.5	16.6	24.0	1.3
16 years	33.4	35.7	27.8	2.4	0.7	13.0	22.2	0.8
17 years	31.3	34.3	31.1	3.2	0.1	14.8	21.1	2.0

[1] Included as significant abnormality in youths' but not children's examination.

Source: Vital and Health Statistics, Series 11 - No. 129, Table 1, page 31.

Table 29

Percent of children in 1963-65 and youths in 1966-70 with a medical history of selected illnesses or other physical conditions, operations, hospitalization, or exercise restriction: United States, 1963-70

Medical History Item	Both sexes 6-11 years	Boys 6-11 years	Girls 6-11 years	Both sexes 12-17 years	Boys 12-17 years	Girls 12-17 years
Infective diseases						
Chickenpox	---	---	---	84.1	83.7	84.5
Measles	85.8	85.5	86.2	92.5	92.4	92.6
Mumps	48.8	50.1	47.3	64.6	67.0	62.2
Scarlet fever	3.8	3.8	3.9	5.0	4.7	5.2
Whooping cough	9.4	8.9	9.8	14.5	14.7	14.2
Accidents						
Broken bones	7.8	8.5	7.0	17.3	21.1	13.3
Knocked unconscious	3.4	4.0	2.8	8.9	10.0	7.8
Scars from burns	4.5	4.4	4.7	---	---	---
Other accidents	4.2	4.7	3.7	12.3	15.9	8.6
Allergies and related conditions						
Asthma	5.3	6.5	4.0	6.0	6.8	5.1
Hay fever	4.6	5.5	3.6	9.2	10.0	8.5
Other allergies	11.4	12.2	10.7	13.6	12.8	14.4
Kidney condition	3.9	2.6	5.1	4.6	3.0	6.2
Heart condition	3.7	4.2	3.1	4.9	5.3	4.5
Respiratory conditions						
Sore throat	11.7	10.2	13.2	---	---	---
Colds	21.0	19.9	22.1	---	---	---
Coughs	10.7	11.0	10.4	---	---	---
Bronchitis	15.7	16.9	14.4	---	---	---
Chest colds	6.2	6.5	5.9	---	---	---
Pneumonia	---	---	---	11.2	10.9	11.4
Sensory-neurological conditions						
Convulsions or fits	3.3	3.5	3.1	3.1	3.5	2.8
Eye trouble	14.0	12.7	15.3	6.8	6.7	7.0
Trouble hearing	4.3	4.8	3.7	3.7	3.7	3.7
Earaches	26.8	24.8	28.8	15.1	11.7	18.6
Running ears	11.9	12.2	11.6	9.4	9.1	9.6
Problem talking	8.4	10.0	6.8	4.3	5.2	3.3
Trouble walking	2.3	2.5	2.1	2.0	2.4	1.6
Arm or leg limitation	1.3	1.3	1.2	1.7	1.9	1.4
Operations	30.8	35.3	26.1	39.2	41.9	36.4
Hospitalized more than 1 day	26.8	30.0	23.6	50.4	53.8	46.9
Exercise restricted:						
Ever	5.4	5.6	5.2	11.1	11.8	10.4
Now	1.5	1.4	1.6	4.6	4.6	4.7
Taking medicine regularly	4.1	4.0	4.2	6.5	6.5	6.5

Source: Vital and Health Statistics, Series 11 - Number 129, Table 4, pages 34-37.

Table 30. Estimated percentage of the child population, 6-11 years of age, by gradation of hearing handicap: United States, 1963-65

Average hearing level for 500, 1000 and 2000 cps in the better ear	Ability to understand speech	Both sexes	Boys	Girls
		Percentage		
Less than 15 dB	No significant difficulty with faint speech	99.2	99.1	99.2
15-29 dB	Difficulty only with faint speech	0.7	0.7	0.7
30-44 dB	Frequent difficulty with normal speech	0.1	0.1	0.1
45-59 dB	Frequent difficulty with loud speech	*	*	*
60-79 dB	Understands only shouted or amplified speech	*	*	*
80 or more dB	Usually cannot understand even amplified speech	*	*	*

*Figure does not meet standards of reliability or precision.

Source: Vital and Health Statistics, Series, 11-No. 102, Table C, page 12.

Table 31. Prevalence rates for abnormalities of the ear, nose and throat for children 6-11 years of age: United States, 1963-65.

Site and condition	Right	Left
	Rate per 100 children	
External ear and surrounding area		
External ear, total	1.7	1.7
Congenital defects of pinna	0.8	0.8
Auricular region abnormalities:		
Posterior	0.2	0.2
Anterior	0.3	0.3
Auditory canal		
Abnormalities, total	15.7	15.4
Occluded:		
Partially	7.9	8.2
Completely	7.5	6.9
Inner ear and tympanic membrane		
Drum:		
Total	15.0	15.2
Not visible	10.1	9.8
Not mobile	4.7	4.0
Dull	5.7	5.6
Transparent	3.4	3.6
Opaque	2.8	3.1
Bulging	0.4	0.2
Retracted	6.0	6.1
Red	1.2	1.1
Other discoloration	0.5	0.5
Perforated:		
With discharge	0.1	0.2
Without discharge	0.3	0.2
Scars	1.8	1.8
Nose		
Deviated septum	2.6	2.7
Hypertrophy of turbinates	8.0	8.2
Polyps	0.1	0.0
Obstruction	1.6	1.4
Profuse discharge	5.6	
Swollen tissue	9.2	
Oral pharynx		
Cleft palate	0.2	
Tonsils:		
Removed	13.9	
Tags	9.6	
Grade I	41.5	
Grade II	33.9	
Grade III	1.2	
Hypertrophic lymphoid tissue	7.4	
Heavy postnasal discharge	1.9	

Source: Vital and Health Statistics, Series 11-No. 114, page 62.

Table 32. Cumulative percentage of children and youth 6-17 years of age reaching specified acuity levels for binocular distance vision by age and sex: United States, 1963-1970.

Age	20/20 or better			Poorer than 20/30			Poorer than 20/70		
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
				Uncorrected					
6-11 years	74.8	77.0	72.4	11.1	10.3	11.9	3.6	3.2	4.0
12-17 years	70.3	73.9	66.3	22.4	19.1	26.0	12.2	10.9	13.6
				With usual correction					
12-17 years	88.2	89.6	87.1	5.0	3.9	5.9	0.9	0.8	0.9

Source: Vital and Health Statistics,
Series 11 - No. 101, Table 1, page 17
Series 11 - No. 127, Tables 2 and 9, pages 26 and 33.

Table 33. Cumulative percentage of children and youth 6-17 years of age reaching specified acuity levels for binocular near vision without correction by age and sex: United States, 1963-1970.

Age	14/14 or 13/13 or better			Poorer than 14/21 or 13/19.5		
	Total	Boys	Girls	Total	Boys	Girls
6-11 years	72.6	75.3	69.8	5.9	5.1	6.8
12-17 years	83.7	86.2	81.5	8.2	6.6	9.6

Note: Levels 14/14 and 14/21 apply to children 6-11.

Levels 13/13 and 13/19.5 apply to youth 12-17.

Source: Vital and Health Statistics,

Series 11- No. 101, Table 5, page 21

Series 11- No. 127, Table 3, page 27.

Table 34. Mean number of decayed (D), missing (M) and filled (F) permanent teeth per child 6-11 years, by age, sex and race. United States: 1963-1965.

Age and Sex	All DMF teeth			D teeth			M teeth			F teeth		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Both sexes 6-11 years	1.4	1.4	1.1	0.5	0.4	0.7	0.1	0.1	0.1	0.8	0.9	0.2
Boys	1.2	1.3	1.1	0.4	0.4	0.7	0.1	0.1	0.2	0.7	0.8	0.2
6	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	-	0.1	0.1	-
7	0.5	0.5	0.7	0.2	0.2	0.6	0.0	0.0	0.0	0.2	0.2	0.1
8	1.0	1.0	0.8	0.4	0.4	0.7	0.0	0.0	0.0	0.5	0.6	0.1
9	1.4	1.4	1.4	0.6	0.5	1.0	0.1	0.0	0.2	0.8	0.9	0.1
10	2.2	2.3	1.7	0.7	0.7	0.9	0.2	0.1	0.3	1.4	1.5	0.5
11	2.4	2.4	2.1	0.7	0.7	1.2	0.2	0.2	0.4	1.4	1.6	0.5
Girls	1.5	1.6	1.1	0.5	0.5	0.7	0.1	0.1	0.1	0.9	1.0	0.3
6	0.2	0.3	0.1	0.1	0.1	0.1	-	-	-	0.1	0.2	-
7	0.7	0.8	0.6	0.4	0.4	0.4	0.0	0.0	0.0	0.3	0.4	0.1
8	1.2	1.2	0.8	0.4	0.4	0.6	0.0	0.0	0.0	0.7	0.8	0.2
9	1.8	1.9	1.4	0.6	0.5	0.9	0.1	0.1	0.2	1.1	1.2	0.3
10	2.2	2.3	1.7	0.7	0.6	0.8	0.2	0.2	0.2	1.4	1.5	0.6
11	3.2	3.4	2.0	1.0	1.0	1.2	0.2	0.2	0.2	1.9	2.2	0.5

Source: Vital and Health Statistics, Series 11 - No. 106, Table 1, page 13.

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Table 35. Mean heights and weights of children 6-17 years of age by race, sex and age: United States, 1963-1965

Sex and Age	Mean height (cm)			Mean weight (kg)		
	Total	White	Black	Total	White	Black
Boys						
6 years	118.6	118.5	119.1	22.0	22.0	21.8
7 years	124.5	124.5	125.2	24.7	24.8	24.0
8 years	130.0	129.8	131.3	27.8	27.8	27.5
9 years	135.5	135.5	135.0	31.2	31.4	29.4
10 years	140.2	140.3	139.6	33.7	33.9	32.4
11 years	145.7	145.7	145.7	38.3	38.6	36.8
12 years	152.3	152.3	152.1	43.0	43.1	43.0
13 years	159.8	159.9	159.7	50.0	49.9	50.6
14 years	166.7	166.9	165.7	56.7	57.0	54.7
15 years	171.4	171.6	170.4	61.6	62.3	57.0
16 years	174.3	174.4	174.0	64.8	65.0	63.7
17 years	175.5	175.7	174.5	68.0	65.2	66.6
Girls						
6 years	117.8	117.7	118.5	21.5	21.6	21.1
7 years	123.5	123.4	124.6	24.2	24.3	23.7
8 years	129.4	129.4	129.4	27.5	27.6	27.0
9 years	135.5	135.1	137.5	31.4	31.4	31.2
10 years	140.0	140.8	141.8	35.2	35.1	35.7
11 years	147.6	147.3	149.2	40.0	39.8	41.1
12 years	155.2	155.0	156.5	46.6	46.2	49.2
13 years	158.8	158.7	159.0	50.5	50.5	50.2
14 years	161.4	161.4	161.5	54.2	54.0	55.0
15 years	162.2	162.4	161.7	56.5	56.7	55.6
16 years	162.7	162.8	161.9	58.1	58.0	58.5
17 years	162.9	163.0	162.7	57.6	57.4	58.8

Source: Vital and Health Statistics,
Series 11 - No. 104, Tables 10 and 11, page 28.
Series 11 - No. 124, Tables 1 and 8, pages 34 and 42.
Series 11 - No. 126, Tables 1 and 6, pages 16 and 21.

Table 36. Mean height and mean weight of all children 6-11 years of age by sex, race and annual family income: United States, 1963-1965.

Income	Boys						Girls					
	Height (cm)			Weight (kg)			Height (cm)			Weight (kg)		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Under $500	129.8	129.0	133.4	26.71	26.4	28.0	126.4	124.2	131.6	24.53	23.7	26.4
$500- $999	129.3	127.7	131.9	27.17	26.6	28.1	132.3	131.2	134.2	29.62	28.6	31.4
$1,000- $1,999	130.3	129.5	131.5	27.95	27.7	28.3	130.1	129.6	131.3	27.80	27.6	28.3
$2,000- $2,999	130.9	130.0	132.1	28.55	28.6	28.3	131.7	131.2	132.7	29.33	29.2	29.6
$3,000- $3,999	131.3	131.8	130.1	28.59	29.2	26.5	130.6	130.7	130.6	29.32	29.9	27.8
$4,000- $4,999	131.1	130.4	135.7	29.01	28.7	30.9	131.9	131.5	134.0	29.84	29.7	30.7
$5,000- $6,999	132.2	132.1	133.0	29.68	29.7	28.9	131.9	131.6	134.5	29.75	29.7	30.5
$7,000- $9,999	133.7	133.6	133.2	30.55	30.6	29.1	133.0	132.8	136.8	30.29	30.2	32.0
$10,000-$14,999	133.4	133.5	132.7	30.08	30.1	30.3	133.9	133.8	129.2	30.94	31.0	23.9
$15,000 or more	133.5	133.6	--	30.58	30.6	--	134.5	134.3	--	31.33	31.3	--
Don't know	131.2	--	--	29.02	--	--	132.1	--	--	29.84	--	--
Blank or refused	132.1	--	--	30.14	--	--	133.6	--	--	29.58	--	--

Source: Vital and Health Statistics, Series 11 - No. 119, Tables 3, 6 and 8, pages 35, 40 and 44.

Table 37. Mean height and mean weight of children 6-11 years of age by sex, race, and education of parent, United States: 1963-1965.

Education of Parent	Boys						Girls					
	Height (cm)			Weight (kg)			Height (cm)			Weight (kg)		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
Under 5 years	130.2	129.6	132.0	27.66	26.5	27.9	129.4	127.9	136.3	28.39	27.4	32.9
5-7 years	130.9	130.2	132.4	28.92	28.6	29.5	131.7	130.9	133.5	28.57	28.0	29.7
8 years	132.6	132.2	134.0	29.92	30.0	29.6	132.6	133.0	131.2	29.93	30.6	27.7
9-11 years	131.4	131.4	131.7	29.18	29.6	27.8	130.9	130.3	133.3	29.23	28.9	30.3
12 years	132.1	132.2	131.8	29.35	29.5	27.7	132.6	132.4	133.7	30.17	30.3	29.4
13-15 years	133.2	133.3	131.6	29.96	29.9	30.0	131.8	131.7	132.3	29.50	29.3	31.8
16 years	133.6	133.4	137.1	30.68	30.6	31.5	133.4	133.6	128.5	30.58	30.7	26.7
17 or more	133.3	133.3	135.9	29.85	29.9	29.8	134.3	134.0	136.7	30.65	30.5	32.6
Unknown	129.0	--	--	27.36	--	--	131.0	--	--	30.01	--	--

Source: Vital and Health Statistics, Series 11 - No. 119, Tables 3, 7 and 9, pages 35, 42 and 46.

Table 38. Triceps skinfold (in mm) of children aged 6-17 by sex, age at last birthday and race: sample size, mean, standard deviation, and selected percentiles (1963-70).

Age, Sex and Race	n	$\bar{X}$	s	Percentiles						
				5th	10th	25th	50th	75th	90th	95th
WHITE										
Boys										
6 years	489	8.3	2.82	5.0	6.0	6.5	8.0	9.5	12.0	13.0
7 years	551	8.7	3.20	5.0	6.0	7.0	8.0	10.0	12.0	14.5
8 years	537	9.3	3.80	5.0	6.0	7.0	8.0	11.0	14.0	17.0
9 years	525	10.4	5.06	5.0	6.0	7.0	9.0	12.0	17.0	21.0
10 years	509	10.5	4.41	5.5	6.0	7.5	9.5	13.0	16.0	20.0
11 years	542	11.5	5.32	5.5	6.0	8.0	10.0	14.0	19.0	22.0
12 years	540	11.0	5.82	5.2	5.7	7.2	9.7	13.6	19.8	23.2
13 years	542	10.8	5.81	4.8	5.4	7.1	9.4	13.4	19.7	22.6
14 years	526	9.8	5.59	4.3	5.0	6.3	8.2	12.5	17.4	21.2
15 years	525	9.3	5.29	4.3	4.8	6.0	7.8	11.2	16.4	21.3
16 years	495	9.1	5.11	4.2	5.0	5.9	7.6	11.6	16.5	20.5
17 years	417	9.2	5.47	4.1	4.5	5.6	7.3	11.6	15.8	20.7
Girls										
6 years	461	10.0	3.39	6.0	6.5	8.0	10.0	11.0	14.0	16.0
7 years	512	10.8	3.47	6.5	7.0	8.0	10.0	12.5	16.0	18.0
8 years	498	11.7	4.34	6.0	7.0	9.0	11.0	14.0	18.0	20.0
9 years	494	12.7	4.83	7.0	8.0	9.0	11.5	15.0	20.0	22.5
10 years	505	13.0	5.08	6.0	7.0	9.0	12.0	16.0	20.0	23.0
11 years	477	12.9	5.07	7.0	7.5	9.0	12.0	16.0	20.1	22.0
12 years	455	13.0	5.78	6.1	7.1	9.2	12.0	16.0	22.1	25.1
13 years	490	13.8	5.87	6.6	7.6	9.6	12.7	17.2	22.7	25.4
14 years	484	15.1	6.08	7.3	8.5	11.0	14.2	19.7	23.5	26.8
15 years	424	16.1	6.65	7.5	8.8	12.0	15.1	20.0	25.4	29.9
16 years	440	16.8	6.72	8.1	9.7	12.3	16.0	21.2	25.5	29.1
17 years	392	16.8	6.24	8.5	10.1	12.4	16.3	20.8	25.3	29.5
BLACK										
Boys										
6 years	84	7.0	2.26	4.0	5.0	5.5	7.0	8.0	10.0	11.0
7 years	79	6.4	2.14	4.0	4.0	5.0	6.0	7.0	9.0	10.0
8 years	79	7.1	2.98	4.0	4.0	5.0	6.5	8.0	12.0	13.0
9 years	74	7.2	2.99	4.0	4.0	5.0	6.5	8.0	11.0	14.0
10 years	65	7.6	3.49	4.0	4.0	5.5	7.0	9.0	11.0	13.0
11 years	83	8.1	4.32	4.0	4.0	6.0	7.0	9.0	12.0	18.0
12 years	101	8.7	5.39	3.8	4.7	5.6	7.4	10.3	15.3	23.2
13 years	80	8.5	5.82	3.6	4.2	5.2	7.2	10.3	15.6	25.2
14 years	88	7.6	5.39	3.6	4.1	4.8	6.4	8.4	14.2	19.2
15 years	84	6.8	3.08	3.9	4.2	5.1	6.4	7.7	10.6	14.7
16 years	57	7.1	3.26	4.0	4.3	4.9	6.7	8.9	11.7	12.8
17 years	69	7.7	5.11	4.2	4.6	5.3	6.1	8.5	14.0	15.8

Age, Sex and Race	n	$\bar{X}$	s	5th	10th	25th	50th	75th	90th	95th
BLACK										
Girls										
6 years	72	7.9	2.84	5.0	5.0	6.0	7.0	9.0	11.0	14.0
7 years	93	8.3	3.68	5.0	5.0	6.0	7.5	9.0	12.0	16.0
8 years	113	9.6	4.59	5.0	5.0	6.5	8.0	11.0	14.0	20.0
9 years	84	10.2	4.45	5.0	6.0	7.0	9.0	12.5	15.5	19.0
10 years	77	10.3	4.74	5.0	6.0	7.0	9.0	12.0	20.0	20.2
11 years	84	10.9	5.58	4.0	6.0	7.0	10.0	12.0	20.0	25.0
12 years	88	12.2	6.16	6.0	6.5	7.7	10.6	16.2	22.5	25.6
13 years	91	12.0	6.95	6.0	6.3	7.7	9.8	13.6	23.9	27.2
14 years	101	13.6	6.35	5.5	6.7	10.0	12.5	17.3	22.1	24.6
15 years	73	14.1	5.88	7.2	8.2	10.2	12.8	17.9	22.7	25.8
16 years	93	14.9	7.87	7.0	7.6	9.6	13.1	17.8	26.4	31.5
17 years	74	14.5	5.85	7.1	7.6	10.7	13.4	18.2	23.3	25.8

Source: Vital and Health Statistics, Series 11-No. 120, Table 4, page 23, and Series 11-No. 132, Table 7, page 23.

Note: **Earlier survey (Series 11-Number 120) percentile data were rounded to the nearest half millimeter.**

Table 39. Subscapular skinfold (in mm) of children by race, sex, and age at last birthday: sample sizes, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1963-70.

Race, sex, and Age	n	$\bar{X}$	s	Percentile						
				5th	10th	25th	50th	75th	90th	95th
WHITE										
Boys										
6 years	489	4.9	1.90	3.0	3.5	4.0	4.0	5.0	6.5	7.0
7 years	551	5.2	2.60	3.0	4.0	4.0	4.5	6.0	7.0	8.0
8 years	537	5.6	3.07	3.5	4.0	4.0	5.0	6.0	8.0	12.0
9 years	525	6.3	4.07	3.5	4.0	4.0	5.0	6.0	10.0	15.0
10 years	509	6.5	3.98	3.5	4.0	4.0	5.0	7.0	10.5	15.0
11 years	542	7.3	4.57	4.0	4.0	4.5	6.0	8.0	14.0	17.5
12 years	540	7.4	5.46	3.6	4.1	4.7	5.7	7.8	14.0	21.1
13 years	542	8.2	6.31	4.0	4.3	5.1	6.2	8.7	16.5	22.3
14 years	527	8.2	5.67	4.2	4.6	5.4	6.5	8.7	14.6	20.6
15 years	525	8.5	5.67	4.5	5.1	5.8	6.9	9.2	14.8	21.3
16 years	496	8.6	5.13	5.1	5.3	6.2	7.2	9.3	15.0	20.5
17 years	415	9.4	5.04	5.1	5.6	6.5	7.8	10.7	17.1	22.0
Girls										
6 years	461	5.6	2.84	3.5	4.0	4.0	5.0	6.0	8.0	10.5
7 years	512	6.2	3.07	4.0	4.0	4.0	5.0	7.0	9.5	12.0
8 years	498	6.9	4.00	4.0	4.0	4.5	6.0	8.0	12.0	16.0
9 years	494	7.9	5.04	4.0	4.0	5.0	6.0	9.0	15.0	19.0
10 years	505	8.2	5.03	4.0	4.0	5.0	6.0	9.5	16.0	20.0
11 years	477	8.6	4.85	4.0	4.0	6.0	7.0	10.0	16.0	20.0
12 years	454	9.6	6.16	4.4	5.0	5.8	7.6	11.6	18.6	23.7
13 years	490	10.8	6.92	4.9	5.3	6.5	8.5	12.8	21.3	25.5
14 years	484	11.6	6.80	5.5	6.2	7.4	9.7	13.8	20.4	26.3
15 years	423	12.6	7.41	5.8	6.4	7.7	10.3	15.3	24.4	30.0
16 years	441	12.9	7.36	6.2	6.8	8.1	10.8	15.5	24.0	29.8
17 years	393	13.2	7.79	6.2	6.6	8.2	11.2	17.0	23.4	31.0
BLACK										
Boys										
6 years	84	4.7	1.38	3.0	4.0	4.0	4.0	5.0	6.0	6.5
7 years	79	4.6	1.14	3.0	4.0	4.0	4.0	5.0	6.0	7.0
8 years	79	5.0	1.42	3.0	4.0	4.0	5.0	6.0	6.5	7.0
9 years	74	5.2	1.57	3.0	4.0	4.0	5.0	6.0	6.5	8.0
10 years	65	5.5	2.12	3.5	4.0	4.0	5.0	6.0	8.0	12.0
11 years	83	5.9	3.41	3.5	4.0	4.0	5.0	6.0	8.0	14.0
12 years	101	6.3	3.92	4.1	4.2	4.7	5.5	6.5	9.4	16.5
13 years	80	7.5	5.30	4.2	4.4	5.1	6.2	7.6	11.6	17.2
14 years	88	7.3	5.29	4.1	4.4	5.2	6.3	7.6	10.5	15.3
15 years	84	6.8	2.89	4.4	4.8	5.4	6.4	7.5	9.4	11.7
16 years	57	7.5	3.14	4.3	4.7	5.6	7.3	8.8	11.2	12.3
17 years	69	9.0	5.98	5.2	5.5	6.6	7.6	9.6	11.9	20.7

Table 39, cont.

Race, Sex, and Age	n	$\bar{X}$	s	Percentile						
				5th	10th	25th	50th	75th	90th	95th
BLACK										
Girls										
6 years	72	4.9	1.07	4.0	4.0	4.0	5.0	5.5	6.0	7.0
7 years	93	5.5	2.87	3.0	4.0	4.0	5.0	6.0	7.0	10.0
8 years	113	6.4	3.40	4.0	4.0	4.0	5.0	7.0	10.0	13.0
9 years	84	7.0	4.25	4.0	4.0	5.0	6.0	7.0	10.0	14.0
10 years	77	7.6	3.93	4.0	5.0	5.0	6.0	8.0	11.0	12.0
11 years	84	8.5	5.28	4.0	4.0	5.5	7.0	9.0	14.0	20.0
12 years	88	10.4	6.69	4.6	5.3	6.6	8.4	11.8	20.5	24.6
13 years	91	10.5	6.40	5.2	5.7	7.0	8.6	11.6	18.7	30.0
14 years	101	11.3	6.25	5.7	6.4	7.5	9.5	13.6	18.1	25.1
15 years	73	11.9	6.04	6.2	6.7	8.4	10.4	13.4	21.5	26.0
16 years	93	13.8	8.72	6.1	7.1	8.3	10.5	16.4	26.6	32.8
17 years	74	13.4	7.27	6.9	7.3	8.3	12.3	16.0	22.1	30.5

Note: Earlier survey (Series 11 - Number 120) percentile data were rounded to the nearest half millimeter.

Source: Vital and Health Statistics, Series 11- No. 120, Table 5, page 24, and Series 11- No. 132, Table 8, page 24.

Table 40. Midaxillary skinfold (in mm) of children by race, sex, and age at last birthday: sample sizes, mean, standard deviation, standard error of the mean, and selected percentiles, United States, 1963-70.

Race, Sex, and Age	n	$\bar{X}$	s	Percentile						
				5th	10th	25th	50th	75th	90th	95th
WHITE										
Boys										
6 years	489	4.1	2.12	2.5	3.0	3.0	4.0	4.0	5.0	7.0
7 years	551	4.5	3.39	3.0	3.0	3.0	4.0	5.0	6.0	8.0
8 years	537	4.9	3.15	3.0	3.0	3.0	4.0	5.0	7.0	10.0
9 years	525	5.7	4.05	3.0	3.0	3.5	4.0	6.0	10.0	15.0
10 years	509	5.7	3.99	3.0	3.0	3.5	4.0	6.0	10.0	15.0
11 years	542	6.5	4.68	3.0	3.0	4.0	5.0	7.0	13.0	18.0
12 years	540	6.5	5.01	3.0	3.2	3.8	4.8	6.8	14.2	19.6
13 years	542	6.8	5.57	3.2	3.3	4.1	5.0	7.1	13.8	19.5
14 years	526	6.9	5.92	3.2	3.5	4.2	5.2	7.1	14.3	19.8
15 years	525	7.2	5.84	3.4	3.8	4.4	5.5	7.6	13.4	19.7
16 years	496	7.0	5.01	3.5	4.0	4.5	5.6	7.5	13.2	18.3
17 years	416	7.8	5.65	3.6	4.1	4.6	5.8	8.3	15.1	22.4
Girls										
6 years	461	5.0	3.03	3.0	3.0	3.5	4.0	5.0	8.0	10.0
7 years	512	5.4	2.92	3.0	3.0	4.0	4.5	6.0	9.0	11.0
8 years	498	6.3	4.04	3.0	3.0	4.0	5.0	7.0	11.0	15.0
9 years	494	7.2	4.80	3.0	3.5	4.0	5.5	8.0	14.0	18.0
10 years	505	7.5	5.04	3.0	3.5	4.0	6.0	9.0	16.0	20.0
11 years	477	8.0	5.06	3.5	4.0	5.0	6.0	10.0	16.0	19.0
12 years	454	8.6	5.91	3.6	4.2	5.1	6.6	10.6	16.8	23.5
13 years	490	9.4	6.33	4.0	4.5	5.7	7.5	11.5	18.2	23.3
14 years	484	10.3	6.28	4.4	5.1	6.4	8.4	12.8	20.1	23.2
15 years	424	11.1	7.12	4.6	5.2	6.5	8.7	13.4	22.5	27.4
16 years	441	11.4	7.06	4.8	5.6	6.9	9.5	13.7	21.6	28.2
17 years	393	11.1	7.11	4.6	5.4	6.7	8.8	13.8	21.1	26.2
BLACK										
Boys										
6 years	84	3.9	1.13	3.0	3.0	3.0	4.0	4.0	5.5	6.0
7 years	79	3.9	1.24	2.5	3.0	3.0	4.0	4.0	5.0	6.0
8 years	79	3.9	1.17	3.0	3.0	3.0	4.0	4.5	5.0	6.0
9 years	74	4.1	1.47	3.0	3.0	3.0	4.0	4.0	6.0	7.0
10 years	65	4.7	2.55	3.0	3.0	3.0	4.0	5.0	7.0	10.0
11 years	83	4.9	3.40	3.0	3.0	4.0	4.0	5.0	6.5	13.0
12 years	101	4.9	3.24	3.1	3.2	3.5	4.2	5.1	7.4	13.2
13 years	80	5.7	4.39	3.0	3.2	3.7	4.7	5.8	12.2	15.2
14 years	88	5.3	4.02	2.8	3.2	4.0	4.6	5.5	8.2	10.4
15 years	84	5.1	2.38	3.2	3.5	4.2	4.8	5.7	7.2	10.5
16 years	57	5.6	2.98	3.2	3.5	4.3	5.4	6.6	7.9	9.6
17 years	69	6.6	6.06	3.5	4.0	4.3	4.8	6.7	8.9	18.6

Table 40, cont.

Race, Sex, and Age	N	$\bar{X}$	s	Percentile 5th	10th	25th	50th	75th	90th	95th
BLACK										
Girls										
6 years	72	4.1	1.29	3.0	3.0	3.0	4.0	5.0	6.0	7.0
7 years	93	4.7	2.39	3.0	3.0	3.0	4.0	5.0	7.0	8.0
8 years	113	5.4	3.36	2.5	3.0	3.0	4.0	6.0	9.0	11.0
9 years	84	5.6	3.29	3.0	3.0	4.0	5.0	6.5	8.0	12.0
10 years	77	6.3	4.39	3.0	3.0	4.0	5.0	7.0	10.0	16.0
11 years	84	7.0	4.30	3.0	4.0	4.0	5.0	8.0	13.0	16.0
12 years	88	8.8	6.02	3.7	4.3	5.4	7.1	9.8	17.3	22.5
13 years	91	8.6	6.03	3.5	4.2	5.4	6.7	9.8	18.3	23.8
14 years	101	9.4	5.39	4.1	4.5	6.2	8.3	12.0	16.7	21.1
15 years	73	9.6	6.02	4.4	4.8	6.1	7.6	11.4	19.2	23.4
16 years	93	10.0	6.02	4.3	5.0	6.1	8.2	11.7	21.4	23.5
17 years	74	10.1	5.53	5.0	5.3	6.2	9.1	13.7	18.0	21.3

Note: Earlier survey (Series 11 - Number 120) percentile data were rounded to the nearest half millimeter.

Source: Vital and Health Statistics, Series 11- No. 120, Table 6, page 25, and Series 11- No. 132, Table 9, page 25.

Table 41.

Percent of Children by Age starting to walk, age first real word spoken and parents' impression of learning speed: United States, 1963-1965

Age and sex	Age started walking				Age spoke first real word				Learning speed compared with other children			
	Under 1 year	1-1½ years	Over 1½ years	Unknown	Under 1 year	1-1½ years	Over 1½ years	Unknown	Faster	Same	Slower	Unknown
	Percent of children											
Both sexes												
6-11 years-----	47.5	47.1	3.6	1.8	42.6	41.0	8.4	8.0	20.2	74.8	4.2	0.8
Boys												
6-11 years-----	45.9	48.6	3.8	1.6	39.3	42.7	9.9	8.0	16.9	76.7	5.5	0.9
Girls												
6-11 years-----	49.1	45.5	3.3	2.0	46.1	39.1	6.9	7.9	23.5	72.9	2.8	0.7

Source: Vital and Health Statistics, Series 11 - Number 108. Table 1, page 19.

Table 42.

Percent of children with sleep affected by television, radio or movies; having unpleasant dreams or fear of the dark, by age and sex: United States, 1963-1965

Age and sex	Sleep affected by TV, radio, or movies			Frequency of unpleasant dreams				Fear of dark		
	Yes	No	Unknown	Frequently	Not often	Never	Unknown	Afraid	Not afraid	Unknown
	Percent of children									
Both sexes										
6-11 years	27.1	70.0	2.9	1.8	41.8	52.1	4.3	23.3	74.2	2.5
6 years	27.9	69.5	2.6	1.8	44.4	49.8	4.0	28.2	68.5	3.3
7 years	28.9	67.8	3.2	1.8	40.8	52.8	4.6	27.6	69.5	2.9
8 years	27.9	69.1	3.1	1.9	44.0	49.4	4.6	24.9	73.0	2.1
9 years	28.8	68.7	2.5	2.4	42.2	52.2	3.7	22.7	75.2	2.1
10 years	26.1	71.0	2.9	1.8	40.5	53.1	4.7	18.5	79.3	2.2
11 years	22.7	74.0	3.3	1.0	38.4	55.5	5.1	17.4	80.5	2.1
Boys										
6-11 years	27.0	70.1	2.9	1.9	41.2	52.0	4.8	21.2	76.4	2.4
6 years	29.4	67.7	3.0	2.3	44.7	48.2	4.8	29.1	67.4	3.5
7 years	29.6	67.5	2.9	2.2	39.1	53.6	5.2	27.4	69.8	2.8
8 years	29.0	68.4	2.6	1.9	46.6	47.1	4.4	21.8	76.3	1.9
9 years	26.3	71.7	2.0	2.6	39.4	53.7	4.3	18.7	79.1	2.2
10 years	27.0	69.8	3.2	1.8	38.0	55.7	4.5	15.0	83.2	1.8
11 years	20.2	76.1	3.7	0.8	39.3	54.3	5.6	14.6	83.2	2.2
Girls										
6-11 years	27.2	69.8	3.0	1.6	42.4	52.1	3.9	25.5	72.0	2.5
6 years	26.4	71.3	2.2	1.3	44.2	51.4	3.1	27.2	69.7	3.1
7 years	28.3	68.2	3.5	1.5	42.6	51.9	4.0	27.9	69.1	3.0
8 years	26.7	69.8	3.6	2.0	41.6	51.7	4.7	28.1	69.6	2.3
9 years	31.3	65.5	3.1	2.1	45.0	50.8	2.1	26.9	71.2	1.9
10 years	25.2	72.3	2.5	1.7	43.0	50.5	4.9	22.1	75.3	2.6
11 years	25.2	71.8	2.9	1.3	37.5	56.6	4.5	20.3	77.7	2.0

Source: Vital and Health Statistics, Series 11 - Number 108, Table 4, page 22 and Table 14, page 32.

Table 43.

Percent distributions of youths by frequency of insomnia and nightmares according to sex and age: United States 1966-70

Sex and Age	Trouble getting to sleep or staying asleep			Nightmares		
	Very often	Only from time to time	Never	Quite frequently	Only from time to time	Never
	Percent distributions					
Both sexes						
12-17 years	6.6	43.6	49.7	2.8	42.7	54.5
12 years	6.8	38.3	54.9	3.3	46.1	50.6
13 years	5.8	41.7	52.5	2.8	45.2	52.0
14 years	5.5	43.0	51.5	2.5	40.7	56.8
15 years	6.4	41.3	52.3	3.2	39.1	57.7
16 years	7.7	48.8	43.5	2.0	43.5	54.5
17 years	7.6	49.9	42.5	2.8	41.5	55.7
Boys						
12-17 years	6.3	40.2	53.5	2.6	38.7	58.7
12 years	6.9	38.2	54.9	3.5	44.4	52.1
13 years	6.0	40.6	53.4	2.4	45.3	52.3
14 years	4.9	37.7	57.4	2.5	35.8	61.6
15 years	6.3	37.9	55.8	2.7	33.1	64.2
16 years	7.3	43.2	49.5	1.7	37.2	61.1
17 years	6.2	44.2	49.6	2.7	35.5	61.8
Girls						
12-17 years	7.0	47.2	45.8	3.0	46.9	50.1
12 years	6.7	38.4	54.9	3.1	47.9	49.0
13 years	5.6	42.7	51.6	3.3	45.1	51.6
14 years	6.2	48.4	45.5	2.4	45.8	51.9
15 years	6.5	44.9	48.6	3.8	45.2	51.0
16 years	8.2	54.5	37.3	2.3	50.0	47.7
17 years	9.0	55.6	35.4	2.9	47.5	49.5

Source: Vital and Health Statistics, Series 11 - Number 137, Table 12, p. 23

Table 44.

Percent of children by frequency of bedwetting by age and sex: United States 1963-1965

Age and sex	Frequency of bed-wetting reported					Does not wet bed	Unknown
	Total	Several times a week	Several times a month	About once a month	Less often		
	Percent of Children						
Both sexes							
6-11 years	15.4	5.2	4.6	1.6	3.7	84.4	0.2
6 years	21.2	8.4	5.8	1.6	4.5	78.6	0.2
7 years	16.7	5.0	4.9	2.3	4.5	83.2	0.1
8 years	16.9	6.3	5.2	1.5	3.4	82.9	0.2
9 years	15.0	4.9	4.6	1.1	4.3	84.9	0.2
10 years	11.7	3.7	3.2	1.7	2.9	88.0	0.3
11 years	10.4	2.9	3.7	1.1	2.5	89.3	-
Boys							
6-11 years	18.3	6.9	5.0	1.7	4.2	81.6	0.2
6 years	25.4	11.3	5.5	2.1	5.2	74.4	0.1
7 years	18.8	6.0	5.4	2.6	4.8	81.2	-
8 years	19.1	8.2	5.8	1.3	3.5	80.8	0.1
9 years	18.5	6.7	6.2	1.0	4.6	81.3	0.2
10 years	14.2	5.2	3.1	2.0	3.7	85.8	-
11 years	13.0	3.9	4.1	1.4	3.4	86.5	0.6
Girls							
6-11 years	12.4	3.5	4.1	1.4	3.2	87.3	0.2
6 years	16.8	5.5	6.0	1.1	3.8	83.0	0.2
7 years	14.5	3.9	4.3	2.1	4.2	85.3	0.1
8 years	14.6	4.3	4.6	1.7	3.3	85.2	0.2
9 years	11.3	3.0	2.8	1.2	3.9	88.6	0.1
10 years	9.1	2.2	3.2	1.5	2.0	90.3	0.6
11 years	7.8	1.9	3.4	0.7	1.6	92.2	-

Source: Vital and Health Statistics, Series 11 - Number 108, Table 18, p. 36

Table 45.

Percent of youths who wet bed during the past 12 months, percent distribution of these youths by present health status, and prevalence rate of youths who wet bed per 100 youths by present health status: United States, 1966-70

Age and sex	Percent of all youths who wet bed	Percent distribution by health status					Prevalence according to health status				
		Excellent	Very good	Good	Fair	Poor	Excellent	Very good	Good	Fair	Poor
Both sexes		Percent of youths who wet bed					Number of youths who wet bed per 100				
12-17 years	4.7	20.4	37.1	36.4	4.9	1.2	2.9	5.2	5.9	7.2	18.5
Boys											
12-17 years	6.1	20.6	40.2	32.7	5.0	1.5	3.7	7.1	7.2	9.9	35.8
Girls											
12-17 years	3.3	19.9	31.4	43.4	4.8	0.6	2.1	3.1	4.6	4.7	5.6

Source: Vital and Health Statistics, Series 11 - Number 137, Table 28, p. 39

Table 46.

Percent of children by degree of tension or nervousness as rated by parents: United States, 1963-65

Age and sex	Degree of tension or nervousness				
	Rather high strung	Moderately tense	Moderately relaxed	Unusually calm and relaxed	Unknown
	Percent of children				
Both sexes					
6-11 years-----	17.1	27.5	45.8	8.8	0.8
6 years-----	14.6	26.1	49.9	8.4	0.9
7 years-----	16.0	27.3	46.9	9.1	0.7
8 years-----	16.5	26.6	47.2	9.0	0.7
9 years-----	18.3	29.4	43.4	8.1	0.8
10 years----	19.1	25.9	43.9	10.4	0.7
11 years----	18.2	29.8	43.0	7.9	1.1
Boys					
6-11 years-----	17.6	29.4	43.3	9.0	0.7
6 years-----	13.8	29.3	47.5	8.6	0.8
7 years-----	16.7	31.7	42.0	8.9	0.7
8 years-----	18.0	28.5	43.7	9.2	0.5
9 years-----	18.6	30.2	42.3	8.1	0.8
10 years----	20.1	26.3	42.5	10.8	0.3
11 years----	18.7	30.3	41.6	8.4	0.9
Girls					
6-11 years-----	16.6	25.5	48.4	8.7	0.9
6 years-----	15.5	22.8	52.5	8.1	1.0
7 years-----	15.2	22.9	51.9	9.3	0.6
8 years-----	15.0	24.6	50.7	8.9	0.8
9 years-----	18.0	28.5	44.6	8.2	0.7
10 years----	18.0	25.4	45.4	10.0	1.2
11 years----	17.7	29.3	44.4	7.4	1.3

Source: Vital and Health Statistics, Series 11 - Number 108, Table 19, page 37

Table 47.

Percent distributions of youths by degree of nervousness as rated by parents according to age and sex: United States, 1966-1970

Age and sex	Degree of nervousness		
	Not at all	Somewhat	Very
	Percent		
Both sexes			
12-17 years-----	49.8	46.3	4.0
12 years-----	50.1	46.6	3.3
13 years-----	48.2	47.6	4.2
14 years-----	51.3	45.3	3.4
15 years-----	50.5	46.1	3.4
16 years-----	49.7	46.3	4.0
17 years-----	48.8	45.6	5.6
Boys			
12-17 years-----	51.1	44.8	4.1
12 years-----	46.4	49.7	3.9
13 years-----	48.9	47.1	4.0
14 years-----	53.7	43.0	3.3
15 years-----	54.0	42.2	3.8
16 years-----	54.0	42.7	3.3
17 years-----	49.9	43.4	6.7
Girls			
12-17 years-----	48.4	47.8	3.8
12 years-----	53.8	43.5	2.7
13 years-----	47.5	48.0	4.4
14 years-----	48.8	47.7	3.5
15 years-----	47.0	50.0	3.0
16 years-----	45.3	50.0	4.7
17 years-----	47.7	47.8	4.5

Source: Vital and Health Statistics, Series 11 - Number 137, Table 18, page 29.

Table 48.

Percent distribution of youths by frequency of anxiety feelings, according to sex and age: United States, 1966-70

Sex and age	Frequency of anxiety feelings				
	Total	Often	Sometimes	Rarely	Never
	Percent distribution				
Both sexes					
12-17 years	100.0	7.6	36.1	36.0	20.3
12 years	100.0	4.7	30.6	33.8	30.9
13 years	100.0	6.0	36.1	33.2	24.7
14 years	100.0	7.0	33.8	38.5	20.7
15 years	100.0	7.0	36.2	37.4	19.4
16 years	100.0	9.2	38.6	38.3	13.9
17 years	100.0	12.4	42.0	35.0	10.5
Boys					
12-17 years	100.0	6.3	32.9	37.1	23.7
12 years	100.0	4.5	28.8	35.5	31.2
13 years	100.0	5.9	32.6	34.0	27.5
14 years	100.0	5.6	32.1	37.4	24.9
15 years	100.0	5.8	31.4	38.5	24.3
16 years	100.0	5.9	35.3	40.0	18.7
17 years	100.0	10.8	37.9	37.2	14.1
Girls					
12-17 years	100.0	8.9	39.3	34.9	16.8
12 years	100.0	5.0	32.5	32.0	30.6
13 years	100.0	6.2	39.7	32.4	21.7
14 years	100.0	8.5	35.5	39.6	16.4
15 years	100.0	8.3	41.0	36.2	14.4
16 years	100.0	12.5	42.0	36.5	9.0
17 years	100.0	14.0	46.2	32.8	7.0

Source: Vital and Health Statistics, Series 11 - Number 147, Table 2, page 26.

Table 49.

Percent of children (1963-1965) and youths (1966-70) by number of meals per day usually eaten with family: United States

Age and sex	Meals per day usually eaten with family			
	Two or more	One	None	Unknown
	Percent			
Both sexes				
6-11 years	91.6	5.3	0.2	2.9
6 years	92.6	3.7	0.2	3.6
7 years	91.7	5.1	0.3	2.9
8 years	91.2	5.0	0.1	3.7
9 years	92.6	4.8	0.3	2.3
10 years	92.3	5.5	0.2	2.1
11 years	89.0	7.9	0.3	2.9
Boys				
6-11 years	92.2	4.9	0.1	2.7
6 years	92.2	3.9	-	3.9
7 years	92.4	4.8	-	2.7
8 years	92.0	3.8	-	4.1
9 years	93.4	4.5	-	2.1
10 years	93.3	5.0	0.4	1.4
11 years	90.0	7.4	0.3	2.2
Girls				
6-11 years	90.9	5.7	0.3	3.1
6 years	93.0	3.4	0.3	3.2
7 years	91.0	5.4	0.6	3.0
8 years	90.3	6.2	0.2	3.3
9 years	91.8	5.0	0.6	2.6
10 years	91.2	6.0	-	2.7
11 years	87.9	8.3	0.2	3.6
Both sexes				
12-17 years	61.0	37.6	1.4	
12 years	67.4	31.8	0.8	
13 years	65.4	33.8	0.8	
14 years	61.1	37.3	1.6	
15 years	57.8	41.0	1.1	
16 years	57.5	40.7	1.8	
17 years	55.4	41.9	2.6	
Boys				
12-17 years	63.5	35.1	1.4	
12 years	67.6	31.6	0.8	
13 years	66.0	33.4	0.6	
14 years	63.9	34.1	2.0	
15 years	60.8	37.6	1.6	
16 years	61.7	36.7	1.6	
17 years	60.5	38.0	1.5	
Girls				
12-17 years	58.3	40.1	1.5	
12 years	67.3	31.9	0.8	
13 years	64.8	34.3	1.0	
14 years	58.3	40.6	1.1	
15 years	54.7	44.6	0.7	
16 years	53.1	44.9	2.0	
17 years	50.3	45.9	3.8	

Source: Vital and Health Statistics, Series 11 - Number 108, Table 8, page 26 and Series 11 - Number 137, Table 3, page 14.

Table 50.

Percent of children (1963-1965) and youths (1966-1970) by parents' knowledge of friends, age and sex: United States

Age and sex	Number of friends known by parents						Age and sex	Number of friends known by parents		
	All	Almost all	Quite a number	Only a few	None	Unknown		Knows most of them	Knows half or less	Knows almost none
	Percent of children							Percent of youths		
Both sexes							**Both sexes**			
6-11 years--	44.2	29.0	6.6	19.1	0.0	1.0	12-17 years--	77.0	17.2	5.8
6 years---	47.0	27.5	5.3	18.9	-	1.4	12 years---	81.9	13.8	4.3
7 years---	44.3	27.5	5.8	21.9	0.0	0.4	13 years---	78.8	15.1	6.1
8 years---	46.0	28.9	5.8	18.0	-	1.3	14 years---	77.9	16.3	5.8
9 years---	43.6	29.6	7.9	18.3	-	0.6	15 years---	73.0	20.9	6.1
10 years--	41.1	30.9	7.6	19.0	0.0	1.3	16 years---	73.5	19.9	6.6
11 years--	43.1	30.0	7.4	18.6	-	0.9	17 years---	76.1	18.0	6.0
Boys							**Boys**			
6-11 years--	42.2	29.4	7.2	20.3	-	0.8	12-17 years--	75.1	18.7	6.2
6 years---	44.9	27.9	4.6	21.4	-	1.1	12 years---	79.2	15.6	5.2
7 years---	46.9	25.7	6.2	20.8	-	0.3	13 years---	77.9	16.5	5.5
8 years---	42.2	30.1	6.7	20.0	-	1.0	14 years---	77.7	16.5	5.8
9 years---	42.1	27.4	9.2	20.8	-	0.6	15 years---	72.4	20.5	7.1
10 years--	38.0	32.4	8.1	20.5	-	1.0	16 years---	70.9	21.8	7.3
11 years--	38.7	33.6	8.8	17.9	-	1.0	17 years---	71.4	22.0	6.5
Girls							**Girls**			
6-11 years--	46.3	28.6	6.0	17.9	0.0	1.1	12-17 years--	78.9	15.7	5.3
6 years---	49.1	27.1	6.0	16.2	-	1.6	12 years---	84.7	12.0	3.3
7 years---	41.7	29.4	5.4	23.0	0.1	0.4	13 years---	79.7	13.5	6.8
8 years---	49.9	27.6	5.0	15.8	-	1.6	14 years---	78.1	16.1	5.8
9 years---	45.2	31.9	6.6	15.7	-	0.6	15 years---	73.7	21.3	5.0
10 years--	44.3	29.3	7.2	17.4	0.1	1.6	16 years---	76.3	18.0	5.8
11 years--	47.5	26.3	6.0	19.4	-	0.7	17 years---	80.8	13.8	5.4

Source: Vital and Health Statistics, Series 11 - Number 108, Table 10, page 28, and Series 11 - number 137, Table 6, page 17.

Table 51.

Percent of youths in selected age groups reporting autonomy in decisionmaking, by sex and type of decision: United States 1966-70

Selected age group type of decision	Total	Boys	Girls
	Percent of youths		
12-17 years			
Choosing clothes	33.8	35.8	31.8
How to spend money	52.1	53.4	50.8
Friends to go out with	46.5	53.7	39.1
How late to stay out	4.6	6.7	2.5
12 years			
Choosing clothes	15.2	14.5	16.0
How to spend money	43.0	44.8	41.3
Friends to go out with	35.8	38.8	32.8
How late to stay out	1.5	2.8	0.2
17 years			
Choosing clothes	57.5	62.9	52.0
How to spend money	63.3	65.1	61.5
Friends to go out with	58.7	67.8	49.6
How late to stay out	13.4	19.5	7.1

Source: Vital and Health Statistics, Series 11 - Number 147, Table D, page 10.

Table 52.

Percent distribution of youths by number of contacts with law enforcement officers, percent of youths reporting such contacts, and percent distribution of those youths by whether or not they were arrested, according to sex and age: United States, 1966-70

Sex and age	Number of police contacts					Percent of youths reporting police contacts	Youths reporting police contact			
	Total	One	Two	More than two	None		Total	Thought they were arrested	Not	Don't know
Both sexes	Percent distribution						Percent distribution			
12-17 years---	100.0	13.0	3.2	2.7	81.2	18.8	100.0	14.8	81.2	4.0
12 years-----	100.0	8.3	1.6	0.8	89.3	10.7	100.0	9.9	86.0	4.2
13 years-----	100.0	9.8	1.2	0.7	88.3	11.7	100.0	7.1	89.9	3.1
14 years-----	100.0	11.8	2.8	2.0	83.4	16.6	100.0	8.3	84.8	6.9
15 years-----	100.0	16.0	3.5	3.5	76.9	23.1	100.0	17.6	78.8	3.6
16 years-----	100.0	16.4	3.7	4.2	75.6	24.4	100.0	15.5	79.8	4.6
17 years-----	100.0	16.3	6.3	5.7	71.7	28.3	100.0	21.5	76.2	2.4
Boys										
12-17 years---	100.0	19.0	5.4	4.9	70.7	29.3	100.0	17.0	79.1	3.9
12 years-----	100.0	11.4	2.8	1.4	84.4	15.6	100.0	9.4	85.0	5.6
13 years-----	100.0	16.1	2.3	1.4	80.1	19.9	100.0	7.6	88.9	3.6
14 years-----	100.0	17.9	4.8	3.5	73.7	26.3	100.0	8.9	85.4	5.6
15 years-----	100.0	22.7	6.4	6.2	64.7	35.3	100.0	21.1	74.7	4.2
16 years-----	100.0	24.9	5.8	7.3	62.0	38.0	100.0	18.4	76.8	4.8
17 years-----	100.0	22.0	11.0	10.7	56.2	43.8	100.0	25.5	73.6	0.9
Girls										
12-17 years---	100.0	6.8	0.9	0.5	91.9	8.1	100.0	6.4	89.0	4.6
12 years-----	100.0	5.4	0.5	0.2	94.2	5.8	100.0	11.3	88.7	-
13 years-----	100.0	3.2	0.1	-	96.7	3.3	100.0	4.0	96.0	-
14 years-----	100.0	5.4	0.8	0.5	93.3	6.7	100.0	5.7	82.4	11.8
15 years-----	100.0	9.2	0.6	0.8	89.4	10.6	100.0	5.6	92.6	1.7
16 years-----	100.0	7.8	1.6	1.0	89.6	10.4	100.0	4.2	91.8	4.0
17 years-----	100.0	10.5	1.6	0.5	87.4	12.6	100.0	7.5	85.2	7.3

Source: Vital and Health Statistics, Series 11 - Number 147, Table 49, page 72.

Table 53.

Median length of time spent per day by children in selected activities, by age and sex: United States, 1963-65

Activity	6-11 years			6-year olds	11-year olds
	Both sexes	Boys	Girls		
Watching television	1h-53m	1h-57m	1h-50m	1h-43m	2h-3m
Listening to radio	-	-	-	-	-
Reading newspapers, comics, or magazines	-	-	-	-	7m
Reading books	30m	15m	38m	-	39m
Playing with friends	2h-24m	2h-30m	2h-18m	2h-37m	2h-13m
Playing by self	-	-	-	-	-
Working (chores, etc.)	39m	35m	43m	28m	49m

Source: Vital and Health Statistics, Series 11 - Number 108, Table D, page 14.

Table 54.

Median length of time spent by youths in selected activities on a usual day, by sex and selected age groups: United States, 1966-70

Activity	12-17 years			12 years	17 years
	Both sexes	Boys	Girls		
	Median time (in hr. and min.)				
Watching television	2h-46m	2h-47m	2h-43m	2h-53m	2h-22m
Listening to the radio	1h-24m	1h-06m	1h-43m	0h-51m	1h-59m
Reading newspapers, comics, or magazines	0h-43m	0h-42m	0h-44m	0h-37m	0h-48m
Reading books	1h-06m	0h-55m	1h-19m	1h-06m	1h-15m

Source: Vital and Health Statistics, Series 11 - Number 147, Table E, page 13.

Table 55.

Proportion of children 6-11 years and youths 12-17 years who skipped or repeated grades with reason for repeating, by age and sex: United States, 1963-65, 1966-70.

Age and sex	Percent skipping	Percent repeating	Reason for repeating					
			Total repeating	Academic failure	Social immaturity	Excess absence	Other	Combination
Boys								
Total, 6-11 years	0.6	19.1	100.0	55.5	6.5	4.2	12.2	21.5
6 years	0.2	9.0	100.0	41.4	11.0	5.4	9.7	32.4
7 years	0.1	14.2	100.0	45.9	7.4	1.4	19.8	25.4
8 years	0.9	19.7	100.0	53.5	8.4	2.8	11.3	23.9
9 years	1.0	23.3	100.0	61.2	6.2	4.3	12.0	16.2
10 years	0.7	23.3	100.0	55.2	4.2	6.5	10.4	23.6
11 years	0.7	25.7	100.0	62.2	5.2	4.5	11.2	16.8
Girls								
Total, 6-11 years	0.5	11.6	100.0	53.7	8.0	8.1	10.5	19.8
6 years	-	5.3	100.0	50.4	13.2	5.9	17.6	12.7
7 years	0.2	12.6	100.0	45.5	13.4	5.7	12.2	23.2
8 years	0.3	11.3	100.0	48.0	1.6	5.7	21.7	23.0
9 years	0.1	13.4	100.0	47.9	14.5	13.4	6.1	18.0
10 years	1.4	15.2	100.0	54.1	1.9	12.5	7.4	24.1
11 years	1.2	11.8	100.0	74.6	6.5	1.8	5.2	11.9
Boys								
Total, 12-17 years	1.0	19.6	100.0	49.9	8.3	3.0	19.4	19.4
12 years	0.9	21.6	100.0	57.2	11.9	3.5	9.5	17.9
13 years	1.0	15.7	100.0	50.7	12.5	1.2	16.9	18.7
14 years	1.2	23.9	100.0	52.7	5.0	4.2	19.3	18.8
15 years	0.6	19.0	100.0	45.5	8.5	2.1	21.7	22.2
16 years	1.5	19.3	100.0	48.5	5.2	4.5	27.2	14.6
17 years	0.8	17.8	100.0	39.4	6.1	1.3	27.0	26.2
Girls								
Total, 12-17 years	0.8	11.9	100.0	49.1	7.1	2.1	28.6	13.1
12 years	0.4	14.8	100.0	51.7	5.4	4.1	24.0	14.8
13 years	0.6	12.9	100.0	55.7	9.1	-	24.7	10.5
14 years	0.9	11.1	100.0	39.0	5.7	2.0	37.7	15.6
15 years	0.9	14.2	100.0	36.6	14.8	1.5	30.3	16.8
16 years	1.1	8.5	100.0	62.6	2.1	2.6	30.2	2.5
17 years	0.9	8.5	100.0	55.1	-	3.0	26.6	15.3

Source: Vital and Health Statistics, Series 11 - Number 113, Table 2, page 20 and Series 11 - Number 139, Table 3, page 17.

Table 56.

Percent of youths with specified problems and percent distribution of those recommended for special resources: United States, 1966-70

Type of problem	Youths with specified problems			Youths recommended for special resources	
	Both sexes	Boys	Girls	Boys	Girls
	Percent			Percent distribution	
Total	16.7	19.5	13.9	100.0	100.0
Hard of hearing	0.3	0.4	0.1	2.1	0.9
Sight-saving	0.2	0.2	0.2	1.2	1.6
Speech therapy	1.1	1.3	1.0	6.5	7.0
Orthopedic handicap	0.2	0.1	0.3	0.4	1.8
Gifted	2.8	2.5	3.0	12.1	21.9
Slow learners (not mentally retarded	5.3	6.4	4.1	32.8	29.5
Mentally retarded	1.3	1.9	0.8	9.5	5.7
Emotionally disturbed	1.2	1.7	0.7	8.5	5.1
Remedial reading	6.2	7.7	4.7	39.5	33.6
English for youths from non-English-speaking environments	0.7	1.0	0.5	5.0	3.4
Remedial training in special subject areas	2.6	3.2	2.1	16.2	14.9
Other problems	1.4	1.8	1.1	9.0	7.6

Source: Vital and Health Statistics, Series 11 - number 139, Table A, page 4.

Table 57.

Proportion of children 6-11 years of age, by adjustment, attentiveness, motor activity, age and sex: United States, 1963-65

Age and sex	Adjustment			Attentiveness				Motor activity					
	A problem	Unusually well adjusted	No problem	Very Attentive	Average	Less than average	No basis for judging	Constantly moving	More restless than average	Average	Very quiet	Varies	No basis for judging
	Percent												
Both sexes													
Total, 6-11 years--	16.8	14.3	68.9	18.9	56.3	21.8	2.9	8.2	16.1	51.6	14.6	6.4	3.1
6 years-----	15.0	12.7	72.3	17.4	57.5	21.9	3.2	8.8	13.7	53.2	13.4	6.8	4.0
7 years-----	15.2	14.8	70.0	18.5	58.2	20.2	3.1	7.9	15.8	55.0	13.2	5.1	3.0
8 years-----	16.7	14.5	68.8	17.0	59.1	20.5	3.4	8.2	18.7	50.3	13.7	5.9	3.2
9 years-----	17.6	13.6	68.8	19.6	55.0	23.4	2.0	7.9	16.0	50.9	15.2	7.0	3.0
10 years----	17.5	15.5	67.0	20.8	54.6	21.5	3.1	8.0	15.6	50.2	17.1	6.2	2.8
11 years----	18.7	14.9	66.5	20.2	53.5	23.7	2.6	8.3	16.7	49.8	15.4	7.3	2.5
Boys													
Total, 6-11 years--	23.7	11.9	64.4	13.8	54.7	28.5	3.0	12.4	20.5	47.2	11.6	5.5	2.8
6 years-----	21.5	12.1	66.4	13.7	54.9	27.7	3.7	12.1	18.7	47.0	11.6	7.0	3.7
7 years-----	20.5	12.7	66.8	12.7	57.0	27.2	3.1	11.8	19.0	52.2	9.7	4.6	2.8
8 years-----	26.2	10.3	63.6	11.0	57.6	28.0	3.4	12.4	23.9	44.6	11.0	5.3	2.8
9 years-----	25.0	10.7	64.3	14.0	51.1	32.7	2.1	13.5	19.7	46.0	12.0	5.6	3.2
10 years----	24.2	13.2	62.5	14.5	57.1	25.0	3.4	12.4	19.8	46.7	13.2	5.2	2.7
11 years----	24.6	12.8	62.6	17.0	50.4	30.3	2.3	11.9	21.8	46.8	12.1	5.6	1.8
Girls													
Total, 6-11 years--	9.6	16.8	73.6	24.1	58.0	15.0	2.8	3.9	11.6	56.0	17.8	7.3	3.4
6 years-----	8.3	13.4	78.3	21.2	60.1	15.9	2.8	5.4	8.6	59.6	15.4	6.6	4.4
7 years-----	9.8	16.8	73.4	24.4	59.5	13.0	3.0	4.0	12.5	57.8	16.8	5.7	3.2
8 years-----	6.8	18.9	74.4	23.2	60.6	12.7	3.5	3.7	13.2	56.2	16.6	6.6	3.7
9 years-----	9.8	16.7	73.5	25.5	59.1	13.4	1.9	2.0	12.1	56.0	18.6	8.5	2.7
10 years----	10.6	17.8	71.5	27.2	52.0	17.9	2.8	3.5	11.3	53.8	21.0	7.3	2.9
11 years----	12.6	17.0	70.4	23.4	56.6	17.0	3.0	4.6	11.5	52.8	18.8	9.1	3.3

Source: Vital and Health Statistics, Series 11 - Number 113, Table 12, page 31.

Table 58.

Proportion of children 6-11 years of age showing discipline or other problems, by type of problem, frequency of discipline, age and sex: United States, 1963-65

Age and sex	Type of Problem									Frequency of discipline			
	Excessive fighting	Too rough	Frequently injured	Aggressive behavior	Uses bad words	Other parents complain	Discipline not working	No basis for judging	Not a problem	Frequently	Occasionally	Never	No basis for judging
	Percent												
Both sexes													
Total, 6-11 years--	6.4	5.1	2.6	6.9	2.1	0.7	1.5	4.2	75.6	7.0	47.8	36.2	9.0
6 years-----	5.3	5.1	3.3	6.0	1.8	0.2	1.3	5.1	75.5	8.2	49.5	33.7	8.6
7 years-----	6.6	5.4	1.8	6.2	2.0	0.8	1.1	3.4	76.0	6.8	49.7	33.7	9.9
8 years-----	6.4	5.0	3.5	7.3	2.4	0.8	1.3	3.1	74.2	6.7	46.9	37.4	9.0
9 years-----	7.3	5.4	3.3	6.6	2.6	0.7	2.2	5.2	74.8	6.2	47.9	36.0	9.8
10 years----	6.5	4.7	2.1	7.3	2.0	1.2	1.9	4.8	75.8	7.3	47.2	37.0	8.5
11 years----	6.2	5.2	1.8	8.0	2.0	0.7	1.2	3.7	77.7	6.5	45.3	39.8	8.4
Boys													
Total, 6-11 years--	10.1	8.7	2.7	11.2	3.7	1.1	2.5	4.2	68.8	11.1	55.4	25.1	8.4
6 years-----	8.3	8.2	4.1	9.2	3.0	0.4	2.0	5.5	69.5	11.8	53.6	25.7	8.9
7 years-----	11.7	9.6	2.0	10.9	3.4	1.6	1.9	3.2	68.4	11.3	56.8	24.0	7.9
8 years-----	10.2	8.4	2.7	12.2	4.1	1.4	2.0	2.9	67.2	10.8	56.1	25.6	7.6
9 years-----	11.3	9.6	3.6	11.2	5.1	1.1	3.9	5.0	66.1	10.4	57.0	22.6	9.9
10 years----	9.7	8.1	2.2	11.1	3.1	0.9	3.4	4.2	70.0	11.3	53.8	25.9	8.9
11 years----	9.3	8.2	1.5	12.7	3.3	1.0	2.0	4.4	71.6	10.9	55.2	26.8	7.1
Girls													
Total, 6-11 years--	2.5	1.5	2.5	2.4	0.5	0.4	0.4	4.2	82.7	2.7	39.8	47.8	9.7
6 years-----	2.3	2.0	2.4	2.6	0.6	-	0.6	4.8	81.6	4.4	45.2	42.0	8.3
7 years-----	1.3	1.2	1.5	1.4	0.6	-	0.3	3.6	83.8	2.1	42.4	43.6	11.9
8 years-----	2.3	1.4	4.3	2.1	0.5	0.2	0.6	3.3	81.5	2.4	37.4	49.7	10.5
9 years-----	3.0	0.9	3.0	1.6	-	0.3	0.3	5.3	83.8	1.8	38.3	50.1	9.7
10 years----	3.2	1.3	1.9	3.3	0.9	1.6	0.4	5.3	81.7	3.2	40.4	48.5	8.0
11 years----	3.1	2.1	2.0	3.3	0.6	0.4	0.4	3.0	83.8	2.0	35.2	53.0	9.7

Source: Vital and Health Statistics, Series 11 - Number 113, Table 13, page 32.

Table 59.

Average deviation IQ's on the Wechsler Intelligence Scale for white and black children, by age and region: United States, 1963-65

Age and sex	White				Black			
	Northeast	Midwest	South	West	Northeast	Midwest	South	West
	Deviation IQ							
Both sexes								
6-11 years	103.1	103.2	97.4	103.0	89.7	89.1	85.6	91.0
6 years	102.9	102.3	99.5	102.4	89.5	88.3	88.6	94.1
7 years	102.4	102.9	98.8	104.0	90.8	90.7	86.2	91.3
8 years	103.3	103.2	96.6	102.4	93.1	88.0	86.8	90.9
9 years	104.1	103.6	96.1	103.4	91.0	91.9	85.7	94.5
10 years	103.2	103.8	96.6	103.5	89.1	92.8	83,8	91.3
11 years	103.6	103.9	97.7	103.0	90.3	88.0	84.6	91.1

Source: Vital and Health Statistics, Series 11 - No. 110, Table 8, page 34.

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Table 60.

Average deviation IQ's on the Wechsler Intelligence Scale for Children by age, sex, and education of parent: United States, 1963-65

Age and sex	Years of schooling completed							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
	Deviation IQ							
Both sexes								
6-11 years	85.0	90.5	96.5	97.7	102.9	108.0	109.6	111.9
6 years	87.9	90.3	96.9	96.6	102.8	108.0	110.5	111.4
7 years	86.7	90.8	96.6	97.8	102.5	109.6	107.0	115.1
8 years	84.8	92.0	97.3	98.4	102.5	106.4	107.9	111.7
9 years	84.4	90.9	98.0	98.2	102.7	108.8	114.6	112.0
10 years	83.5	90.3	96.5	97.1	104.5	108.5	107.9	112.9
11 years	84.6	89.9	95.3	99.1	103.4	109.7	111.1	112.2

Source: Vital and Health Statistics, Series 11 - No. 110, Table 38, page 55.

Table 61.

Average deviation IQ's on the Wechsler Intelligence Scale for white and black children, by age, sex, and annual family income: United States, 1963-65

Race, age and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000 $9,999	$10,000-$14,999	$15,000 or more
	Deviation IQ					
White						
Both sexes 6-11 years---	91.4	98.2	102.3	105.3	108.5	111.0
6 years-----	92.6	98.6	101.7	105.8	108.5	112.4
7 years-----	93.4	97.9	102.5	105.2	109.3	113.2
8 years-----	91.3	98.9	101.3	105.1	108.8	107.8
9 years-----	91.5	97.9	103.6	105.1	108.1	112.5
10 years----	89.3	99.6	103.3	105.5	107.7	111.0
11 years----	90.7	97.1	101.9	106.0	110.4	112.2
Boys 6-11 years--	92.8	99.2	103.6	106.6	110.6	113.2
Girls 6-11 years-	90.1	97.1	100.8	103.9	106.2	108.3
Black						
Both sexes 6-11 years---	85.0	88.4	89.3	94.7	98.9	-[b]
6 years-----	87.7	90.4	87.2	98.0	*[a]	-
7 years-----	85.3	88.2	94.7	95.8	*	-
8 years-----	86.2	89.3	89.2	95.3	100.9	-
9 years-----	85.3	87.8	90.3	98.1	-	-
10 years----	84.2	88.7	90.5	93.9	*	-
11 years----	92.9	89.8	88.6	94.4	-	-
Boys 6-11 years--	85.4	88.7	89.4	94.3	102.0	-
Girls 6-11 years-	84.6	88.2	89.2	95.1	94.9	-

[a] Figure does not meet standards of reliability or precision.

[b] Quantity zero.

Source: Vital and Health Statistics, Series 11 - Number 110, Table 28, page 49.

Table 62.

Average deviation IQ's on the Wechsler Intelligence Scale for Children, by age, sex, and size of place of residence: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes		Deviation IQ							
6-11 years	100.1	100.4	104.4	100.5	95.9	98.2	100.0	100.7	99.0
6 years	100.1	100.3	106.2	100.0	97.5	99.7	99.7	99.3	99.0
7 years	100.2	100.9	103.5	101.1	95.8	99.7	105.0	100.7	98.9
8 years	99.9	100.2	104.6	99.1	93.5	96.2	101.3	102.4	99.8
9 years	100.2	102.2	103.8	102.6	95.6	98.4	98.8	99.0	98.9
10 years	100.1	100.5	103.9	100.6	95.1	100.0	98.6	104.1	99.0
11 years	100.1	98.8	105.4	101.2	99.5	98.6	99.9	100.0	98.7

Source: Vital and Health Statistics, Series 11 - No. 110, Table 17, page 40.

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Table 63.

Average deviation IQ's from the Wechsler Intelligence Scale for Children, by age, and population change in place of residence from 1950 to 1960: United States, 1963-65

Age and sex	Rate of population change			
	Loss	Below average gain	Average gain	Above average gain
Both sexes	Deviation IQ			
6-11 years	98.0	99.6	98.0	104.6
6 years	98.9	99.3	98.2	104.6
7 years	98.5	99.5	98.3	104.4
8 years	99.2	98.4	98.5	103.8
9 years	97.4	100.4	98.6	104.5
10 years	97.8	100.6	96.5	105.4
11 years	96.7	100.3	98.1	105.6

Source: Vital and Health Statistics, Series 11 - No. 110, Table 20, page 42.

Table 64.

Averages of raw scores for children on the Man and Woman Scales of the Goodenough-Harris Drawing Test, by age, race, and sex: United States, 1963-65

Age and sex	Man Scale				Woman Scale			
	Total	White	Black	Other races	Total	White	Black	Other races
	Raw score							
Both sexes								
6-11 years	24.9	25.3	22.7	23.7	29.2	29.1	26.3	31.7
6 years	16.3	17.0	14.4	19.2	20.2	20.7	18.5	25.4
7 years	20.7	21.1	19.3	12.0	24.5	25.3	21.8	26.0
8 years	23.9	24.4	21.6	30.1	28.1	28.7	26.2	31.9
9 years	26.6	27.2	24.3	26.1	30.5	31.2	28.1	33.5
10 years	29.9	30.5	27.5	24.4	33.8	34.6	30.1	35.0
11 years	32.5	33.0	31.2	27.7	36.2	37.0	33.0	40.1
Boys								
6-11 years	24.9	25.3	22.7	25.1	25.3	26.0	22.1	-
6 years	16.3	16.9	13.9	22.8	17.6	17.7	18.4	-
7 years	20.6	21.2	18.9	12.0	21.2	22.9	16.3	-
8 years	23.8	24.4	21.2	30.1	25.5	26.2	24.0	-
9 years	26.5	27.1	24.4	26.1	26.4	27.5	22.2	-
10 years	29.7	30.3	27.8	24.4	29.3	30.2	24.9	-
11 years	32.4	32.8	31.4	32.8	29.9	30.6	27.9	-
Girls								
6-11 years	24.8	25.2	22.6	16.3	29.9	30.3	27.4	31.7
6 years	17.0	17.4	16.2	15.0	20.7	21.2	18.6	25.4
7 years	20.6	20.8	20.6	-	25.2	25.7	23.7	26.0
8 years	23.6	24.0	23.5	-	28.7	29.2	26.9	31.9
9 years	27.2	27.9	23.4	-	31.4	32.0	29.4	33.5
10 years	30.4	31.4	26.2	-	34.0	35.4	31.1	35.0
11 years	33.0	33.7	30.8	18.0	37.4	38.2	34.2	40.1

Source: Vital and Health Statistics, Series 11 - Number 116. Table 1, page 27.

Table 65.

Mean deviation IQ on the WISC short form, by birthweight and sex for children 6-11 years: United States, 1963-1965

Birthweight from birth certificate	Deviation IQ	
	Boys	Girls
	Mean	
Less than 3 pounds 5 ounces	89.4	90.3
3 pounds 5 ounces-4 pounds 6 ounces	94.2	95.1
4 pounds 7 ounces-5pounds 8 ounces	96.2	96.0
5 pounds 9 ounces-6 pounds 10 ounces	98.1	97.0
6 pounds 11 ounces-7 pounds 11 ounces	101.4	98.3
7 pounds 12 ounces-8 pounds 13 ounces	102.4	99.9
8 pounds 14 ounces-9 pounds 14 ounces	102.0	97.1
9 pounds 15 ounces-11 pounds 0 ounces	97.7	97.7

Source: Vital and Health Statistics, Series 11 - Number 142, Table B, page 10.

Table 66.

Average Reading and Arithmetic standard scores on the Wide Range Achievement Test for children, by education of parent, and age: United States, 1963-65

Age and sex	Years of schooling completed							
	Less than 5 years	5-7 years	8 years	9-11 years	12 years	13-15 years	16 years	17 years or more
Both sexes	Reading Standard score							
6 years-----	91.8	93.5	96.7	99.2	101.6	106.3	106.9	110.5
7 years-----	84.7	93.7	96.5	98.0	103.0	104.9	109.3	111.6
8 years-----	84.4	91.1	95.9	99.6	102.8	106.2	108.7	109.0
9 years-----	85.2	91.8	96.7	99.0	103.0	108.2	111.8	109.6
10 years----	85.6	91.8	97.4	97.4	104.0	107.6	105.6	111.7
11 years----	84.5	91.8	95.8	99.5	102.5	108.1	111.5	110.8
Both sexes	Arithmetic Standard score							
6 years-----	88.0	91.9	97.0	98.0	103.0	108.4	106.4	108.8
7 years-----	83.4	93.6	96.7	99.2	102.6	106.0	107.2	108.0
8 years-----	85.7	94.4	97.0	100.3	103.1	102.7	105.6	107.4
9 years-----	86.0	92.9	99.3	99.0	102.7	107.9	110.5	108.2
10 years----	86.4	93.5	96.2	97.7	103.3	107.2	109.4	110.0
11 years----	87.2	91.7	97.2	100.3	102.5	108.0	109.0	109.6

Source: Vital and Health Statistics, Series 11 - Number 109, Tables 41 and 42, page 69.

Table 67.

Average standard scores in Reading and Arithmetic on the Wide Range Achievement Test for children, by annual family income and age: United States, 1963-65

Age and sex	Annual family income					
	Less than $3,000	$3,000-$4,999	$5,000-$6,999	$7,000-$9,999	$10,000-$14,999	$15,000 or more
Both sexes	Reading standard score					
6 years-----	93.0	98.3	101.5	104.4	105.4	111.3
7 years-----	89.9	95.8	101.6	104.7	109.2	107.8
8 years-----	89.9	96.2	100.4	105.2	108.2	107.4
9 years-----	90.8	96.6	101.3	104.3	106.2	112.4
10 years----	89.0	96.7	102.2	105.9	108.0	105.0
11 years----	89.9	95.0	100.1	105.3	109.7	112.6
Both sexes	Arithmetic standard score					
6 years-----	90.7	96.4	103.0	104.3	106.7	109.8
7 years-----	88.6	96.4	102.3	104.8	105.1	106.4
8 years-----	91.3	98.1	100.7	104.2	104.9	107.0
9 years-----	90.6	98.2	102.4	103.0	106.7	110.9
10 years----	89.5	97.7	102.0	104.5	106.5	112.2
11 years----	89.7	97.2	100.7	104.5	108.2	112.5

Source: Vital and Health Statistics, Series 11 - Number 109, Table 32, page 61.

Table 68.

Average standard scores in Reading and Arithmetic on the Wide Range Achievement test for children, by size of place of residence and age: United States, 1963-65

Age and sex	Total urban	Urbanized areas				Urban places outside urbanized areas			Rural areas
		3 million or more	1,000,000-2,999,999	250,000-999,999	Less than 250,000	25,000 or more	10,000-24,999	2,500-9,999	
Both sexes	Reading Standard Score								
6 years-----	100.8	101.5	106.6	102.2	99.0	100.0	95.9	98.7	98.7
7 years-----	100.2	101.7	104.1	99.3	99.3	98.5	102.8	96.5	98.8
8 years-----	100.4	100.4	104.2	98.8	96.8	99.6	100.1	103.8	98.8
9 years-----	100.3	102.0	102.8	102.7	96.1	98.8	97.3	101.2	98.2
10 years----	101.0	102.0	103.8	101.0	97.1	95.0	98.7	103.1	98.4
11 years----	100.2	100.8	104.7	100.8	100.3	100.4	100.4	98.4	97.5
Both sexes	Arithmetic Standard Score								
6 years-----	100.5	101.2	107.0	99.8	99.1	98.0	99.1	99.1	98.0
7 years-----	99.8	102.3	103.0	98.1	97.8	98.1	104.2	95.7	98.8
8 years-----	100.3	102.7	103.5	97.8	97.0	101.5	101.1	101.9	98.1
9 years-----	100.5	102.0	103.8	102.0	94.1	99.6	100.8	102.4	99.3
10 years----	100.5	101.8	104.2	100.2	94.0	103.3	101.8	101.8	98.8
11 years----	100.5	99.9	105.2	102.5	99.1	98.9	99.5	100.1	98.7

Source: Vital and Health Statistics, Series 11 - Number 109, Tables 19 and 20, pages 49 and 50.

Table 69.

Average standard scores for Reading and Arithmetic on the Wide Range Achievement Test for children, by population change from 1950 to 1960 in size of place of residence and age: United States, 1963-65

Age and sex	Rate of population change			
	Loss	Below-average gain	Average gain	Above-average gain
Both sexes	Reading standard score			
6 years-----	98.6	101.0	101.2	101.7
7 years-----	97.3	99.8	100.7	102.5
8 years-----	99.0	100.4	99.8	101.7
9 years-----	96.4	101.3	100.4	102.2
10 years----	97.7	100.6	98.7	103.3
11 years----	96.7	100.4	99.7	103.0
Both sexes	Arithmetic standard score			
6 years-----	98.4	98.0	100.2	103.6
7 years-----	96.4	99.5	100.6	102.3
8 years-----	97.4	101.9	101.1	100.7
9 years-----	97.4	100.8	101.1	102.4
10 years----	97.7	101.2	99.8	102.5
11 years----	98.1	100.1	100.7	102.8

Source: Vital and Health Statistics, Series 11 - Number 109, Table 26, page 56.

Table 70.

Average standard scores in Reading and Arithmetic on the Wide Range Achievement Test for children, by region and age: United States, 1963-65

Age and sex	Northeast	Midwest	South	West
Both sexes	Reading Standard score			
6 years-----	101.3	100.1	100.6	100.1
7 years-----	102.4	102.5	95.5	99.6
8 years-----	102.6	102.1	94.7	100.3
9 years-----	102.5	102.9	93.5	101.1
10 years----	102.8	102.9	94.5	100.1
11 years----	102.0	101.7	95.6	100.5
Both sexes	Arithmetic Standard score			
6 years-----	101.9	101.2	98.0	99.1
7 years-----	102.6	102.0	94.8	99.5
8 years-----	103.8	101.5	96.4	98.8
9 years-----	102.7	101.7	95.8	100.5
10 years----	101.8	101.5	97.1	100.5
11 years----	101.7	100.7	97.9	101.7

Source: Vital and Health Statistics, Series 11 - Number 109, Table 3, page 33.

Table 71.

Average standard scores in Reading and Arithmetic on the Wide Range Achievement Test for children, by race, age, and sex: United States, 1963-65

Age and sex	Reading subtest			Arithmetic subtest		
	White	Black	Other races	White	Black	Other races
	Standard score					
Both sexes						
6 years-----	101.3	95.4	110.6	101.2	92.5	106.4
7 years-----	102.0	88.7	99.8	101.6	87.2	106.0
8 years-----	101.9	88.7	105.7	101.1	92.0	114.4
9 years-----	101.8	88.8	102.2	101.7	91.0	102.7
10 years----	102.2	88.3	87.2	101.8	89.8	110.0
11 years----	101.6	88.8	98.9	102.1	88.9	101.5
Boys						
6 years-----	100.2	94.7	109.3	100.8	91.0	104.6
7 years-----	100.2	85.6	98.5	100.9	83.4	103.3
8 years-----	100.0	84.7	108.6	100.7	90.6	119.4
9 years-----	100.4	85.5	101.5	101.4	88.2	102.4
10 years----	101.1	87.5	107.2	101.0	88.0	116.1
11 years----	100.3	84.4	87.5	101.3	86.0	94.5
Girls						
6 years-----	102.2	96.0	111.2	101.9	93.7	107.7
7 years-----	103.5	91.7	100.8	102.3	91.4	111.0
8 years-----	103.9	92.1	102.4	101.9	93.6	110.2
9 years-----	103.1	91.6	103.0	102.0	93.5	103.8
10 years----	103.2	88.9	71.7	102.4	91.9	103.9
11 years----	102.8	92.3	110.8	102.7	91.1	108.0

Source: Vital and Health Statistics, Series 11 - Number 109, Table 6, page 36.

Table 72. Mean Intake of Selected Nutrients by Age, Race and Family Income: United States, 1971-1972.

Age in Years	Total			White			Black		
	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level
				Number of Persons Examined[1]					
1-5	1489	448	1010	986	180	791	489	265	208
6-11	1067	312	721	738	177	587	324	177	131
12-17	1045	264	732	708	93	582	326	168	143
				Calories					
1-5	1583	1511	1598	1609	1592	1607	1436	1387	1507
6-11	2060	1933	2103	2103	2059	2118	1806	1690	1943
12-17	2346	1990	2401	2387	2076	2423	2083	1877	2164
				Protein					
1-5	58.4	55.8	59.0	59.6	58.2	59.6	52.2	52.3	52.9
6-11	76.1	71.7	77.6	77.9	76.8	78.2	66.0	62.2	71.5
12-17	89.1	76.0	91.6	91.2	80.5	93.0	75.0	69.6	75.5
				Calcium					
1-5	905	803	927	941	889	945	708	672	752
6-11	1073	911	1127	1125	1002	1154	776	751	821
12-17	1110	888	1144	1163	1041	1175	769	688	790
				Iron					
1-5	8.3	7.9	8.4	8.4	8.2	8.4	7.7	7.4	8.2
6-11	10.4	10.4	10.4	10.5	11.2	10.4	9.7	8.9	10.7
12-17	12.6	11.6	12.7	12.6	11.3	12.8	12.0	11.9	11.6
				Vitamin A					
1-5	3262	3413	3217	3160	3200	3137	3826	3746	4003
6-11	4088	4174	4042	4158	4369	4067	3708	3847	3780
12-17	4219	3688	4340	4334	3477	4457	3423	3764	3025
				Vitamin C					
1-5	71.8	58.8	74.9	73.0	55.0	75.6	64.1	64.6	64.2
6-11	75.6	61.1	79.8	76.3	58.7	79.8	69.4	66.3	74.2
12-17	77.9	72.5	79.5	78.1	71.3	79.5	73.6	73.8	74.0

[1]Totals include persons for whom income information was unknown. Other races not shown separately are included in the total for all races.

Source: First Health and Nutrition Examination Survey, Tables 2, 3, and 4, pages 34, 35, and 36.

Table 73. Mean Intake per 1,000 Calories of Selected Nutrients by Age, Race, and Family Income: United States, 1971-1972.

Age	Total			White			Black		
	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level
	Protein (grams)								
1-5	36.9	36.9	36.9	37.0	36.6	37.1	36.4	37.7	35.1
6-11	36.9	37.1	36.9	37.0	37.3	36.9	36.5	36.8	36.8
12-17	38.0	38.2	38.2	38.2	38.8	38.4	36.0	37.1	34.9
	Calcium (mg)								
1-5	571.7	531.4	580.1	584.8	558.4	588.0	493.0	484.5	499.0
6-11	520.9	471.3	535.9	535.0	486.6	544.8	429.7	444.4	422.5
12-17	473.2	446.2	476.5	487.2	501.4	484.9	369.2	366.5	365.1
	Iron (mg)								
1-5	5.2	5.2	5.2	5.2	5.2	5.2	5.4	5.3	5.5
6-11	5.0	5.4	5.0	5.0	5.4	4.9	5.4	5.3	5.5
12-17	5.4	5.8	5.3	5.3	5.4	5.3	5.7	6.3	5.3
	Vitamin A (I.U.)								
1-5	2061	2259	2013	1964	2010	1952	2664	2701	2656
6-11	1984	2159	1922	1977	2122	1920	2053	2276	1945
12-17	1798	1853	1807	1816	1675	1840	1643	2005	1398
	Vitamin C (mg)								
1-5	45.4	38.9	46.9	45.4	34.6	47.1	44.7	46.6	42.6
6-11	36.7	31.6	37.9	36.3	28.5	37.7	38.4	39.2	38.2
12-17	33.2	36.4	33.1	32.7	34.4	32.8	35.3	39.3	34.2

Source: First Health and Nutrition Examination Survey, Tables 9, 10, and 11, pages 42, 43, and 44.

Table 74. Number and Percent of 1- to 5-year-old Children with Deficient Intake of Selected Nutrients: United States, 1971-1972.

	Total			White			Black		
	All[1]	Below Poverty Level	Above Poverty Level	All[1]	Below Poverty Level	Above Poverty Level	All[1]	Below Poverty Level	Above Poverty Level
Calories (<1000)									
Number	2,461,000	644,000	1,780,000	1,842,000	302,000	1,540,000	613,000	335,000	241,000
Percent	14.6	20.2	13.3	13.0	15.8	12.8	23.8	26.7	19.6
Calcium (<450 mg)									
Number	2,524,000	717,000	1,783,000	1,737,000	276,000	1,459,000	771,000	442,000	307,000
Percent	15.0	22.5	13.4	12.2	14.4	12.1	30.0	35.3	25.0
Iron (<15 mg)									
Number	16,000,000	2,999,000	12,671,000	13,456,000	1,809,000	11,407,000	2,432,000	1,171,000	1,171,000
Percent	94.8	94.2	95.0	94.8	94.0	94.9	94.6	93.6	95.3
Vitamin A (<2000 I.U.)									
Number	6,723,000	1,568,000	5,081,000	5,471,000	987,000	4,437,000	1,231,000	576,000	627,000
Percent	39.8	49.2	38.1	38.5	51.5	36.9	47.9	46.1	51.0
Vitamin C (<40 mg)									
Number	7,731,000	1,732,000	5,816,000	6,407,000	1,115,000	5,147,000	1,295,000	607,000	649,000
Percent	45.8	54.4	43.6	45.1	58.2	42.8	50.4	48.5	52.9

[1]Excludes children with family income unknown.

Source: First Health and Nutrition Examination Survey, Tables 15, 21, 24, 27, and 30, pages 48-49, 64-65, 72-73, 80-81, and 88-89.

Table 75. Mean Levels of Selected Biochemicals: United States, 1971-1972.

Age	Total			White			Black		
	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level
				Hematocrit					
1-5	37.5	36.7	37.6	37.6	36.9	37.7	36.6	36.4	36.8
6-11	39.0	38.2	39.3	39.2	38.3	39.4	38.1	37.7	38.6
12-17	42.0	40.7	42.1	42.2	41.6	42.3	40.2	39.6	40.6
				Serum Iron					
1-5	93.5	93.6	93.0	94.2	96.3	93.4	88.9	89.4	87.8
6-11	102.6	101.0	102.8	103.5	102.4	103.5	97.2	98.6	95.4
12-17	108.4	103.4	109.2	109.4	110.3	109.3	103.1	94.4	109.9
				Transferrin Saturation					
1-5	28.2	27.7	28.2	28.5	29.0	28.3	26.7	25.6	27.4
6-11	31.4	31.1	31.4	31.6	31.5	31.6	30.3	30.1	30.5
12-17	32.1	30.5	32.3	32.2	32.0	32.2	31.6	28.5	34.1
				Serum Protein					
1-5	6.8	6.8	6.7	6.7	6.8	6.7	6.8	6.9	6.8
6-11	7.0	7.0	6.9	6.9	7.0	6.9	7.1	7.2	7.1
12-17	7.1	7.2	7.1	7.1	7.1	7.0	7.3	7.3	7.3
				Serum Albumin					
1-5	4.4	4.4	4.4	4.5	4.5	4.5	4.3	4.3	4.3
6-11	4.4	4.4	4.5	4.5	4.4	4.5	4.4	4.4	4.4
12-17	4.5	4.5	4.6	4.6	4.5	4.6	4.4	4.4	4.5
				Serum Vitamin A					
1-5	37.2	33.5	38.0	38.2	34.5	38.8	31.4	32.1	30.7
6-11	38.3	34.5	39.4	38.8	34.9	39.6	35.6	34.0	37.3
12-17	45.9	41.9	46.6	46.4	43.3	46.9	41.4	40.1	41.7

Source: First Health and Nutrition Examination Survey, Tables 99, 100, and 101, pages 34, 35, and 36.

Table 76. Percent of Children with Low Values of Selected Biochemicals by Age, Race, and Family Income: United States, 1971-1972.

Age	Total			White			Black		
	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level	All	Below Poverty Level	Above Poverty Level
				Hematocrit					
1-5	1.5	2.8	1.3	1.0	1.5	1.0	4.3	4.8	4.2
6-11	3.1	2.7	3.1	2.7	2.2	2.6	5.4	3.8	8.1
12-17	9.0	16.5	7.9	6.6	6.8	6.7	22.9	27.8	18.6
				Serum Iron					
1-5	2.5	3.8	2.3	2.2	2.5	2.2	4.5	5.7	3.1
6-11	2.4	3.1	2.3	2.4	3.7	2.2	2.2	2.0	2.7
12-17	2.0	3.7	1.8	1.6	1.9	1.6	4.7	6.0	3.4
				Transferrin Saturation					
1-5	10.6	14.1	9.8	9.0	12.9	8.6	18.8	15.8	22.1
6-11	11.6	14.5	10.9	12.0	17.7	11.1	10.0	8.9	10.0
12-17	6.5	9.2	6.4	6.1	6.8	6.3	9.6	12.5	7.4
				Serum Protein					
1-5	0.2	0.1	0.3	0.2	Ø	0.2	0.6	0.4	0.9
6-11				4.0	1.1	4.7	0.7	Ø	1.6
12-17	2.7	0.9	3.1	2.9	1.6	3.2	0.8	Ø	0.2
				Serum Albumin					
1-5	Ø	Ø	Ø	Ø		Ø	Ø	Ø	Ø
6-11	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
12-17	Ø	Ø	Ø	Ø		Ø	Ø	Ø	Ø
				Serum Vitamin A					
1-5	3.4	4.5	3.1	2.3	1.6	2.4	10.2	9.1	10.3
6-11	0.7	2.4	0.3	0.7	2.9	0.2	1.0	1.5	0.7
12-17	0.2	Ø	0.2	0.2	Ø	0.2	0.1	Ø	0.2

Source: First Health and Nutrition Examination Survey, Tables 99, 100, and 101, pages 34, 35, and 36.

Table 77. Percent of children and youth under 17 years of age in ten selected states below the 15th percentile for height and weight of the Stuart-Meredith standards by selected ages, sex and race, Ten-State Nutrition Survey: United States, 1968-1970.

Age	Height				Weight			
	Males		Females		Males		Females	
	White (percent)	Black (percent)	White (percent)	Black (percent)	White (percent)	Black (percent)	White (percent)	Black (percent)
2	42	46	46	37	26	34	31	27
4	39	34	44	36	22	22	33	33
6	37	30	38	32	27	27	35	37
8	45	36	39	25	39	32	32	31
10	35	41	31	24	34	45	20	27
12	33	31	26	22	26	27	14	18
14	22	25	22	28	17	21	14	18
16	23	18	23	34	19	24	16	20

Source: Ten-State Nutrition Survey, Vol. III, Tables 1 and 3, pages 19 and 23.

Table 78. Percent Obese by Age, Sex and Ethnic Group for Black and White Persons Twelve to Seventeen Years of Age. Ten-State Nutrition Survey: United States, 1968-1970.

Age	Male		Female	
	White	Black	White	Black
	percent obese	percent obese	percent obese	percent obese
12	18.3	9.3	10.0	9.0
13	15.9	9.8	14.9	13.0
14	18.8	12.5	15.3	18.6
15	24.6	12.6	14.2	11.0
16	29.0	13.0	11.7	11.1
17	17.5	13.3	13.8	15.2

Source: Ten-State Nutrition Survey, Vol. III, Table 20, Appendix, page 85.

Table 79. Number of children 1-6 years of age receiving dental examinations and mean number of decayed and filled (df) teeth by age and ethnic group, Ten-State Nutrition Survey: United States, 1968-1970.

	White		Black		Spanish-American	
	Number	df	Number	df	Number	df
Total	2,550	2.3	2,584	2.0	1,022	2.4
1	296	0.1	294	0.1	136	0.2
2	332	0.5	382	0.5	134	0.8
3	403	1.6	398	1.6	172	2.2
4	467	2.6	514	2.5	170	2.9
5	501	3.6	470	3.0	181	3.3
6	551	3.7	526	3.2	229	4.0

Source: Ten-State Nutrition Survey, Volume III, Tables 2A, 2B, and 3B, pages 116 and 117.

Table 80. Number of children and youth 6-17 years of age receiving dental examination in ten selected states and mean number of Diseased (D), Missing (M), and Filled (F) teeth by age and ethnic group, Ten-State Nutrition Survey: United States, 1968-1970.

Age	White					Black					Spanish American				
	Number of persons	DMF	D	M	F	Number of persons	DMF	D	M	F	Number of persons	DMF	D	M	F
Total	5715	4.5	2.0	.4	2.1	5688	4.1	3.3	.4	.5	2164	3.9	2.2	.8	.9
6	551	.6	.5	0	.1	526	.6	.5	0	.1	229	1.4	.5	.8	.1
7	586	1.3	.8	0	.4	541	1.4	1.2	0	.2	223	1.6	.8	.5	.2
8	559	1.1	1.2	.1	.8	542	2.0	1.7	0	.2	219	2.5	1.5	.6	.4
9	594	2.8	1.5	.1	1.2	564	2.3	1.9	.1	.3	195	2.7	1.5	.7	.4
10	561	3.4	1.8	.2	1.4	524	3.1	2.6	.2	.3	230	3.2	1.7	.8	.7
11	571	4.4	2.0	.3	2.1	537	3.8	3.1	.2	.4	207	4.0	2.1	.9	.9
12	514	5.3	2.5	.5	2.3	548	4.9	3.9	.4	.6	193	4.7	3.0	.9	.9
13	457	6.2	2.7	.5	3.0	477	5.9	4.8	.5	.6	176	5.6	3.4	.8	1.5
14	387	7.6	2.9	.8	3.9	418	6.6	5.1	.7	.9	176	6.0	3.4	1.0	1.7
15	360	8.6	3.3	.8	4.5	425	7.6	5.6	.9	1.1	142	6.7	4.0	1.1	1.5
16	309	9.7	3.4	1.1	5.2	349	8.7	6.4	1.2	1.1	97	7.3	3.7	1.1	2.5
17	266	10.4	3.1	1.4	5.8	237	8.4	5.9	1.4	1.1	77	8.4	4.5	.9	3.2

Source: Ten-State Nutrition Survey, Volume III, Tables 4A, 4B, 5A, 5B, pages 118 and 119.

Table 81. Percent of children under 17 years of age in ten selected states having deficient or low hemoglobin values by age and ethnic group. Ten-State Nutrition Survey: United States, 1968-1970.

Age and Sex and Standards for Age/Sex Groups	White		Black		Spanish-American	
	Total number	% low or deficient	Total number	% low or deficient	Total number	% low or deficient
Total	6353	8.7	6743	32.3	2611	14.0
0-1 all (<10)	233	15.5	349	32.9	119	13.4
2-5 all (<11)	1158	12.0	1365	30.6	488	13.9
6-12 all (<11.5)	3526	6.8	3431	31.3	1404	11.7
13-16 male (<13)	736	15.2	749	47.3	277	27.1
13-16 female (<11.5)	700	3.6	849	25.3	323	13.3

Source: Ten-State Nutrition Survey, Volume IV, Tables 1A and 2A, pages 10 and 13.

Table 82. Percent of children under 17 years of age in ten selected states having deficient or low Serum Vitamin C values (<.20 mg/100 ml) by age, sex and ethnic group. Ten-State Nutrition Survey: United States, 1968-1970.

Age and Sex	White		Black		Spanish American	
	Total number	% low or deficient	Total number	% low or deficient	Total number	% low or deficient
Total	3801	3.1	4030	6.8	1572	4.0
0-1 all	34	2.9	77	13.0	5	*
2-5 all	423	2.8	577	8.9	128	1.6
6-12 all	2181	2.5	2137	5.8	895	3.7
13-16 male	584	4.6	589	7.3	249	5.2
13-16 female	579	4.4	650	7.0	295	4.1

*Figure does not meet standards of reliability.

Source: Ten-State Nutrition Survey, Volume IV, Tables 1A and 2A, pages 192 and 195.

Table 83. Percent of children under 17 years of age in ten selected states having low or deficient Plasma Vitamin A values (<20 μg/100 ml) by age and ethnic group. Ten-State Nutrition Survey: United States, 1968-1970.

Age and Sex	White		Black		Spanish American	
	Total number	% low or deficient	Total number	% low or deficient	Total number	% low or deficient
Total	3483	12.0	4410	11.8	1891	24.1
0-1 all	24	8.3	80	18.8	15	26.7
2-5 all	378	11.6	656	20.0	240	25.8
6-12 all	2041	13.1	2365	12.1	1091	25.2
13-16 male	535	9.7	625	6.5	248	21.4
13-16 female	505	10.3	684	7.0	297	20.9

Source: Ten-State Nutrition Survey, Volume IV, Tables 1A and 2A, pages 141 and 144.

Table 84. Number of children and youth 2-16 years of age in ten selected states tested for six biochemicals and percent with deficient or low values in none, one, or two or more of the six by age and ethnic group, Ten-State Nutrition Survey: United States, 1968-1970.

Age	White				Black				Spanish American			
	Percent with Specified Number of Deficient or Low Values				Percent with Specified Number of Deficient or Low Values				Percent with Specified Number of Deficient or Low Values			
	Total Number	None	One	Two or more	Total Number	None	One	Two or more	Total Number	None	One	Two or more
Total	1937	66.5	27.4	6.0	1846	39.5	37.3	23.2	1016	50.0	30.9	19.1
2-5	111	61.0	34.2	4.5	129	39.5	34.1	26.4	51	52.9	27.5	19.6
6-9	477	64.8	29.1	6.1	377	36.1	40.6	23.3	242	51.3	29.0	19.8
10-16	1349	67.6	26.2	6.1	1340	40.4	36.6	22.9	723	49.3	31.8	18.9

Source: Ten-State Nutrition Survey, Volume IV, Tables 1 and 2, page 291.

Biochemicals tested and cut-off values:

Hemoglobin (See Table 3N)
Plasma Vitamin A (<20 μg/100 ml)
Serum Albumin [2-5 <3.00 gm/100 ml]
[6-16 <3.50 gm/100 ml]

Urinary Thiamine [2-3 <176 μg/gm creatinine]
[4-5 <121 μg/gm creatinine]
[6-9 <181 μg/gm creatinine]
[10-16 <151 μg/gm creatinine]

Serum Vitamin C (<.20 mg/100 ml)
Urinary Riboflavin [2-3 <500 μg/gm creatinine]
[4-5 <300 μg/gm creatinine]
[6-9 <270 μg/gm creatinine]
[10-16 < 200 μg/gm creatinine]

Table 85.

Number in sample and number and percent with intake of vitamin A below the standard: United States, 1968-1970.

Age	Total			White			Black			Spanish American		
	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %
0-5 months	248	61	24.6	96	27	28.1	110	30	27.3	42	8	18.6
6-11 months	340	50	14.7	152	20	13.2	136	21	15.4	52	9	17.3
12-23 months	693	233	33.6	316	90	28.5	277	116	41.9	100	27	27.0
24-36 months	708	290	41.0	309	115	37.2	320	151	47.2	79	24	30.4
10-11 years	2128	1048	49.2	888	393	44.3	734	388	52.9	420	219	52.1
12-14 years	3340	2061	61.7	1335	713	53.4	1301	820	63.0	571	417	73.0
15-16 years	1158	701	60.5	450	238	52.9	518	341	65.8	158	111	70.3

Source: Ten-State Nutrition Survey, Volume V, Tables 9, 10, 27, 28, 45, 46, 63, and 64, pages 24, 25, 39, 40, 56, 57, 73, and 74; and Tables 9, 10, 27, 28, 45, 46, 63, 64, 81, 82, 99, and 100, pages 118, 119, 136, 137, 156, 157, 174, 175, 201, 202, 219, and 220.

Table 86.

Number in sample and number and percent with intake of vitamin C below the standard: United States, 1968-1970.

Age	Total			White			Black			Spanish American		
	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %
0-5 months	248	107	43.1	96	44	45.8	110	49	44.5	42	14	33.3
6-11 months	340	185	54.4	152	88	57.9	136	71	52.2	52	26	50.0
12-23 months	693	348	50.2	316	140	44.3	277	162	58.5	100	46	46.0
24-36 months	708	380	53.7	309	150	48.5	320	183	57.2	79	47	59.5
10-11 years	2128	882	41.4	888	327	36.9	734	319	43.5	370	196	53.0
12-14 years	3340	1400	41.9	1335	471	35.3	1301	620	47.7	571	250	43.8
15-16 years	864	458	53.0	296	146	49.3	436	233	53.1	110	62	56.4

Source: Ten-State Nutrition Survey, Volume V, Tables 17, 18, 35, 36, 53, 54, 71, and 72, pages 30, 31, 46, 47, 64, 65, 79, and 80; Tables 17, 18, 35, 36, 53, 54, 71, 72, 89, 90, 107, and 108, pages 126, 127, 144, 145, 164, 165, 182, 183, 209, 210, 277, and 228.

Table 87.

Number in sample and number and percent with intake of iron below the standard: United States, 1968-1970.

Age	Total			White			Black			Spanish American		
	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %	# in sample	Below standard #	Below standard %
0-5 months	248	138	55.6	96	45	46.9	110	63	57.3	42	30	71.4
6-11 months	340	218	64.1	152	76	50.0	136	103	75.7	52	39	75.0
12-23 months	693	635	91.6	316	278	88.0	277	73	26.4	100	69	69.0
24-36 months	708	671	94.8	309	287	92.9	320	311	97.2	79	74	93.7
10-11 years												
Boys	832	328	39.4	383	140	36.6	268	123	45.9	192	63	32.8
Girls	1296	1150	88.7	505	454	89.9	516	470	91.1	228	185	81.1
12-14 years												
Boys	1624	1228	75.6	678	496	73.2	600	495	82.5	284	1919	67.3
Girls	1716	1508	87.9	657	575	87.5	701	630	89.9	287	237	82.6
15-16 years												
Boys	547	387	70.7	226	149	65.9	235	177	62.1	70	50	71.4
Girls	611	535	87.6	224	193	86.2	283	252	89.0	88	75	85.2

Source: Ten-State Nutrition Survey, Volume V, Tables 7, 8, 25, 26, 43, 44, 61 and 62, pages 22, 23, 37, 38, 54, 55, 71, and 72; Tables 7, 8, 25, 26, 43, 44, 61, 62, 79, 80, 97, and 98, pages 116, 117, 134, 135, 154, 155, 172, 173, 199, 200, 217, and 218.

Table 88

Comparison of Mean Nutrient Intake of Children 10 to 16 Years of Age Participating in School Lunch Programs with Those Not Participating: United States, 1968-1970.

	Number of persons	Calories	Protein (gm)	Calcium (mg)	Iron (mg)	Vit. A (I.U.)	Thiamine (mg)	Riboflavin (mg)	Preformed Niacin (mg)	Vit. C (mg)
Non school lunch	1858									
Mean intake		2246	82.38	881	12.39	4168	1.33	1.90	15.54	67.90
School lunch	2248									
Mean intake		2314	89.86	1099	12.61	5559	1.30	2.26	16.46	70.15
School lunch Contribution		687	28.48	419	3.47	1662	.34	.77	4.51	18.79
Percent Contributed by school lunch		29.69	31.69	38.13	27.52	29.90	26.15	34.07	27.40	26.79

Source: Ten State Nutrition Survey, Volume V, Table 12, page 316.

Table 89.

Mean intakes of selected nutrients by age and Warner Rank: United States, 1968-1970.

Age and Warner Rank	Energy		Protein		Fat	Carbohydrate	Calcium
	kcal	kcal/kg*	gm	gm/kg*	gm	gm	mg
12-23 months							
I	1042	94	44	3.9	45	117	720
II	1173	109	47	4.4	49	138	848
III	1148	105	47	4.3	47	136	884
IV	1286	116	55	5.0	51	153	1046
24-35 months							
I	1262	100	49	3.8	54	147	655
II	1377	106	53	4.1	59	163	774
III	1386	107	53	4.1	57	170	803
IV	1324	102	49	3.7	55	163	817
36-47 months							
I	1342	90	52	3.4	57	159	630
II	1484	101	56	3.8	62	180	793
III	1509	102	56	3.8	63	185	835
IV	1468	102	56	3.9	60	182	870
48-59 months							
I	1459	86	55	3.2	62	173	694
II	1575	96	61	3.6	67	186	846
III	1621	96	61	3.6	67	200	908
IV	1628	96	61	3.5	66	203	910
60-71 months							
I	1499	82	57	3.0	63	180	675
II	1671	87	63	3.3	71	200	884
III	1724	93	66	3.5	72	208	971
IV	1681	88	64	3.4	68	208	972

* Of body weight.

Source: Owen, G. M., et al., Appendix II-1, Tables A, B, C, D, E, F, and G.

Table 90.

Percentage of Children with Low Daily* Dietary Intakes of Selected Nutrients: United States, 1968-1970.

	Warner Rank			
	I	II	III	IV
Energy (kcal/kg)	34	19	15	15
Protein (gm/kg)	3	1	0	0
Calcium (mg)	21	9	8	5
Iron (mg)	55	49	52	50
Vitamin A (IU)	5	0	0	0
Thiamin (mg)	9	2	2	2
Riboflavin (mg)	8	1	1	1
Vitamin C (mg)	16	7	2	2

*Based on standards used in a pilot study in Mississippi.

Source: Owen, G. M., et al., Table XXVIII, page 635.

Table 91.

Mean intake of selected nutrients per 1000 kcal of black and white children by age and Warner Rank: United States, 1968-1970.

Age and Warner Rank	Iron (mg)		Calcium (mg)		Vitamin A (I.U.)		Ascorbic Acid (mg)		Protein (gm)	
	White	Black	White	Black	White	Black	White	Black	White	Black
12-23 mos.										
I	5.3	6.0	780	683	3176	3510	38	42	44	45
II	5.4	6.0	754	680	3784	3775	67	61	41	41
III	5.9		782		4833		79		43	
IV	6.1		819		4895		96		45	
24-47 mos.										
I	5.7	6.7	535	427	2299	2841	36	31	40	43
II	5.5	6.1	568	509	2990	3468	56	62	40	41
III	5.5		579		3493		70		39	
IV	5.5		628		3823		81		39	
48-71 mos.										
I	5.6	6.6	531	389	2118	2150	30	33	39	40
II	5.4	6.7	563	481	2782	2980	47	52	39	41
III	5.5		584		3073		62		39	
IV	5.3		568		3234		66		38	

Source: Owen, G. M., et al., Appendix, Table III-I.

Table 92.

Percentage of Children Using Vitamin/Mineral Supplements by Warner Rank and Age: United States, 1968-1970.

Age (months)	Warner Rank			
	I	II	III	IV
12-23	36	51	70	84
24-35	31	46	65	69
36-47	32	47	54	64
48-59	29	47	61	55
60-71	22	41	57	56

Source: Owen, G. M., et al., Table VI, page 607.

Table 93.

Energy and Nutrient Intakes of Children by Participation in Federal Food Programs and Age: United States, 1968-1970.

Group* by Age (months)	No.	Calories (cal)	Protein (gm)	Calcium (mg)	Iron (mg)	Vitamin A (I.U.)	Thiamin (mg/1,000kcal)	Riboflavin (mg/1,000kcal)	Vitamin (mg)
12-23									
1	33	1,081(303)+	45(15)	737(347)	7.3(5.1)	3,855(2562)	0.81(0.40)	1.61(0.84)	40(36)
2	50	1,032(354)	45(17)	688(374)	7.6(5.5)	4,969(5919)	0.93(0.63)	1.68(0.80)	49(40)
24-47									
1	81	1,354(496)(a)‡	50(19)	629(350)	8.2(4.6)	3,825(3515)	0.65(0.32)	0.98(0.45)(b)‡	58(50)
2	112	1,216(388)	49(18)	614(319)	8.7(6.6)	3,713(3781)	0.76(0.45)	1.23(0.64)	52(43)
48-71									
1	67	1,456(494)	52(17)(a)‡	678(369)	9.1(5.9)	3,547(2814)	0.74(0.52)	1.09(0.66)	63(61)
2	109	1,491(493)	58(21)	675(368)	10.5(6.9)	5,404(8367)	0.70(0.33)	1.09(0.72)	58(53)
12-71									
1	181	1,342(482)	50(17)	667(357)	8.4(5.2)	3.727(3095)	0.71(0.42)	1.12(0.59)(a)‡	57(57)
2	271	1,293(461)	52(20)	652(350)	9.2(6.6)	4,618(6376)	0.76(0.44)	1.26(0.73)	54(47)

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*Children in group 1 were in families receiving Federal Food Stamps or Commodities at the time of the study. Group 2 children were in families who were probably eligible for, but were not participating in, any Federal Food Program. Only children in the lowest socioeconomic group (Warner Rank I) were included.

+First value is mean; value in parentheses is standard deviation.

‡(a) $p < .05$; (b) $p < .01$.

Source: Owen, G. M., et al., Table VIII, page 608.

Table 94.

Selected Food Purchasing Characteristics
by Warner Rank: United States, 1968-1970.

Characteristics	Warner Rank I	II	III	IV
Median percentage of gross family income spent on food	40%	26%	20%	16%
% of families spending under 30% of family income on food	27%	65%	84%	97%
Average cost of food purchased for home use per person per week	$5.62	$6.70	$7.11	$7.60
Percentage of families purchasing food away from home and average cost per week of this food	46%	70% ($5)	80% (over $5)	80%
% of families receiving food stamps or commodities	28%	2%	0	0

Source: Owen, G. M., et al., Table V, page 605 and text pages 609 and 630.

Table 95.

Percentage of Affirmative Responses to Certain Indicators of Parental Permissiveness by Warner Rank*: United States, 1968-1970.

Warner Rank	No.	Caters to Food Preferences	Allows Free Meals and Snacks	Uses Food as a Reward	Withholds Food When Child Misbehaves
			12-23 months		
I	119	34	39	54	21
II	262	40	21	46	20
III	196	40	9	27	10
IV	56	36	9	23	4
			24-47 months		
I	268	29	32	59	33
II	548	23	14	53	32
III	441	22	9	47	27
IV	149	18	7	36	14
			48-71 months		
I	236	27	29	64	40
II	567	22	14	54	31
III	424	20	7	52	32
IV	169	9	5	39	25

*Criteria adapted from "Nutritional Studies on United States Pre-School Children: Dietary Intakes and Practices of Food Procurement, Preparation and Consumption." In Fomon, S.J., and Anderson, T.A. (eds.): Practices of Low Income Families in Feeding Infants and Small Children with Particular Attention to Cultural Subgroups. Rockville, Maryland: DHEW Publication No. (HSM) 72-5602, 1972, pp. 3018.

Source: Owen, G. M., et al., Table IX, page 609.

Table 96.

Numbers of Children Found to Have Abnormalities on Physical Examination by Warner Rank: United States, 1968-1970.

	Warner Rank			
	I	II	III	IV
Total number of children	360	850	675	233
Signs of malnutrition	14	17	6	2
Bossing of skull	36	43	27	9
Epiphyseal swelling of wrists	2	1	1	1
Beading of ribs	1	1	0	0
Hair dyspigmentation	14	17	7	2
Decreased muscle mass	14	26	6	2
Pot belly	4	4	5	4
Hepatomegaly	2	2	2	1
Splenomegaly	1	2	1	1
Abnormal texture of skin	18	17	14	11
Infection of skin	25	42	14	7
Angular lesions of lips	3	3	2	3
Cheilosis	2	2	2	3
Glossitis	2	2	2	2
Goiter-group I	1	1	2	1
Abnormal physical exam	72	85	54	12
Conjunctivitis	14	12	11	1
Otitis media	32	38	34	9
Heart murmur	41	95	74	29
Significant	7	8	6	6

Source: Owen, G. M., et al., Table XVII, page 621.

Table 97.

Percent of children caries free by age and race and Warner Rank for white children: United States, 1968-1970.

Age in completed years	All black children	White children	
		Warner Rank	
		I and II	III and IV
Total	47.0	57.6	66.5
1	98.4	96.3	98.7
2	65.6	83.5	93.1
3	31.7	53.8	66.0
4	24.4	40.2	52.0
5	26.2	27.0	31.4

Source: Owen, G. M., et al., Tables XXa and XXb, page 623.

Table 98

Anthropometry of Black and White Children by Age and Sex: United States, 1968-1970.

Sex	Age Interval (yr)	No.	Mean Values: Height (cm)	Weight (kg)	Head Circumference (cm)	Skinfold (mm)
BOYS						
	1.00 - 1.49					
	Black	16	79.44	10.80	47.56	4.72
	White	97	78.39	10.73	47.15	4.61
	1.50 - 2.49					
	Black	30	86.47	12.62	48.13	4.37
	White	171	86.34	12.42	48.44	4.37
	2.50 - 3.49					
	Black	38	96.45	14.75	49.42	4.07
	White	206	95.02	14.26	49.58	4.30
	3.50 - 4.49					
	Black	40	102.97	16.38	49.92	3.95
	White	199	102.16	16.32	50.44	4.38
	4.50 - 5.49					
	Black	34	111.00	19.49	50.65	3.83
	White	188	108.95	18.44	51.04	4.24
	5.50 - 5.99					
	Black	22	113.27	20.35	50.45	4.01
	White	86	114.35	20.07	51.24	4.25
GIRLS						
	1.00 - 1.49					
	Black	17	74.65	9.83	46.00	5.01
	White	76	76.50	10.31	46.09	4.80
	1.50 - 2.49					
	Black	37	85.95	12.38	48.00	4.43
	White	184	86.40	11.90	47.29	4.63
	2.50 - 3.49					
	Black	28	94.82	14.51	49.07	4.47
	White	173	93.70	13.77	48.47	4.59
	3.50 - 4.49					
	Black	33	102.76	16.19	49.76	4.14
	White	213	101.60	15.91	49.32	4.66
	4.50 - 5.49					
	Black	31	108.39	17.57	49.94	4.46
	White	190	108.11	17.99	49.86	4.84
	5.50 - 5.99					
	Black	19	114.05	21.25	51.00	4.86
	White	86	112.37	19.78	50.28	5.01

Source: Owen, G. M., et al., Tables XXIIa and XXIIb, pages 626 and 627.

Table 99.

Means of Selected Biochemicals by Age and Warner Rank:
United States, 1968-1970.

Age and Warner Rank	Hemoglobin gm/dl	Hematocrit	Plasma Iron ug/dl	Transferrin Saturation Fe/TIBCx100	Total Protein gm/dl	Albumin gm/dl
12-23 months						
I	11.6	35	52	13	6.9	3.9
II	12.0	35	61	15	6.7	4.0
III	12.4	36	72	18	6.7	4.0
IV	12.5	36	74	18	6.5	3.8
24-35 months						
I	12.3	36	72	19	6.9	3.9
II	12.3	36	76	22	6.6	3.9
III	12.5	36	83	22	6.7	4.0
IV	12.6	36	86	24	6.6	4.0
36-47 months						
I	12.3	36	67	19	6.8	3.9
II	12.4	36	80	23	6.7	4.0
III	12.6	37	75	21	6.7	4.0
IV	12.8	36	84	24	6.7	3.9
48-59 months						
I	12.4	36	80	23	6.8	3.9
II	12.6	37	81	23	6.8	4.0
III	12.7	37	82	24	6.8	4.0
IV	12.7	37	81	24	6.7	4.0
60-71 months						
I	12.5	36	73	21	7.0	3.9
II	12.6	36	78	23	6.8	3.9
III	12.7	37	83	24	6.8	4.0
IV	12.8	37	84	24	6.8	4.0

Source: Owen, G. M., et al., Appendix II-2, Tables A, B, C, D, G and H.

Table 100. Number and annual rate of discharges and average length of stay for inpatients under 15 years of age discharged from short-stay hospitals, excluding newborn infants, by selected first-listed diagnostic conditions and sex: United States, 1971.

Diagnostic condition and ICDA code		Number of discharges in thousands			Discharge rate per 10,000 population			Average length of stay in days		
		Both sexes[1]	Male	Female	Both sexes[1]	Male	Female	Both sexes[1]	Male	Female
All conditions[2]		4,029	2,249	1,773	702.3	769.4	630.1	4.7	4.7	4.6
Diarrheal diseases	009	132	74	57	22.9	25.4	20.2	4.5	4.2	5.0
Diseases of the respiratory system:										
Acute respiratory infections except influenza	460-466	324	193	130	56.4	66.0	46.3	4.5	4.6	4.2
Pneumonia, all forms	480-486	243	132	110	42.3	45.2	39.2	6.6	6.6	6.6
Hypertrophy of tonsils and adenoids	500	747	373	372	130.2	127.7	132.2	2.0	2.1	1.9
Diseases of the digestive system:										
Appendicitis	540-543	94	54	39	16.4	18.6	14.0	5.4	5.6	5.2
Inguinal hernia	550,552	114	96	17	19.8	33.0	6.0	3.2	3.3	2.7
Congenital anomalies	740-759	217	126	90	37.8	43.2	31.9	6.9	6.5	7.5
Injuries:										
Fractures, all sites	800-829	186	124	62	32.5	42.4	22.2	5.7	5.9	5.5
Intracranial injury (excluding skull fracture)	850-854	90	57	33	15.7	19.6	11.7	3.3	3.1	3.7
Laceration and open wound	870-907	67	46	21	11.7	15.8	7.4	3.7	4.0	3.2

[1] Includes data for sex not stated.

[2] Includes data for diagnostic conditions not shown in table.

Source: Vital and Health Statistics, Series 13 - No. 16, Table G, Page 9.

Table 101. Number and rate of days of care and average length of stay for inpatients under 15 years of age discharged from short-stay hospitals by sex and age: United States, 1971.

Sex and age	Days of care		Average length of stay in days
	Number in thousands	Rate per 1,000 population	
Both sexes			
Under 15 years	18,772	327.2	4.7
Under 1 year	4,610	1,266.8	6.5
1-4 years	4,781	350.6	4.2
5-14 years	9,381	234.0	4.3
Male			
Under 15 years	10,566	361.5	4.7
Under 1 year	2,620	1,406.9	6.4
1-4 years	2,635	378.9	4.1
5-14 years	5,311	260.2	4.4
Female			
Under 15 years	8,182	290.8	4.6
Under 1 year	1,980	1,114.5	6.7
1-4 years	2,144	320.7	4.4
5-14 years	4,058	206.2	4.1

Source: Vital and Health Statistics, Series 13 - No. 17, Table 6, page 21; and Series 13 - No. 16, Table G, page 9.

Table 102. Average length of stay in days for patients under 15 years of age discharged from short-stay hospitals by color and sex: United States, 1971.

Color	Both Sexes	Male	Female
Total	4.7	4.7	4.6
White	4.4	4.4	4.4
All other	6.5	6.4	6.5
Not stated	4.2	4.4	4.1

Source: Vital and Health Statistics, Series 13 - No. 17, Table 9, page 25.

Table 103. Rate of discharge, days of care and average length of stay for inpatients under 15 years of age discharged from short-stay hospitals by geographic region: United States, 1971.

Region	Rate of discharges per 1,000 population	Rate of days of care per 1,000 population	Average length of stay in days
All regions	70.2	327.2	4.7
Northeast	64.4	336.7	5.2
North Central	85.1	393.2	4.6
South	69.8	332.1	4.8
West	54.4	197.4	3.6

Source: Vital and Health Statistics, Series 13 - No. 17, Table C, page 7.

Table 104. Number of total charges and average charge for inpatients under 15 years of age discharged from short-stay hospitals, excluding newborn infants, by sex: United States, 1968-1970.

Sex	Number of discharges in thousands			Total charges in millions			Average charge per episode of hospitalization		
	1968	1969	1970	1968	1969	1970	1968	1969	1970
Both sexes	4,112	4,164	4,153	$1,227	$1,534	$1,673	$298	$368	$403
Male	2,291	2,322	2,319	694	872	908	303	376	392
Female	1,809	1,837	1,827	531	658	761	293	358	417

Source: Vital and Health Statistics, Series 13 - No. 15, Tables 1, 3, and 5, pages 10, 15, and 21.

Table 105. Percent of black youths reporting health problems in a personal interview by type of problem and sex: Central Harlem, New York City, 1968-1970.

	Black Youth 12-15 Years			Rank Order	
	All (542)	Boys (297)	Girls (245)	Boys	Girls
Eye trouble	25%	20%	32%	1	1
Frequent colds	20	16	26	3	2
Repeated headaches	18	18	18	2	6.5
Nervous or emotional problems	17	13	23	4.5	4
Stomach pains	16	12	21	7	5
Skin problems	14	6	25	15.5	3
Pains in legs and/or arms[a]	14	12	16	7	8
Speech problems	13	13	14	4.5	10.5
Repeated sore throats	13	9	18	11	6.5
Chest pains	11	9	14	11	10.5
Repeated nosebleeds	10	12	8	7	21.5
Long-lasting cough	10	11	9	9	19
Asthma, wheezing	10	9	10	11	15
Vomiting	10	6	15	15.5	9
Hay fever or other allergy	9	8	11	13	12
Repeated sinus trouble	8	6	10	15.5	15
Shaking or trembling	8	5	10	18.5	15
Trouble hearing	7	4	10	21	15
Shortness of breath	7	6	9	15.5	19
Backaches	7	4	10	21	15
Dizziness, fainting	7	5	9	18.5	19
Frequent earaches	5	4	7	21	23
Heart thumping hard	4	1	8	30.5	21.5
Frequent constipation	4	2	6	27	27
Long-lasting bronchitis[b]	4	3	4	24	27
Indigestion	3	2	5	27	25.5
Bed wetting	3	3	2	24	29.5
Heart conditions	3	2	5	27	25.5
Anemia	2	1	22	30.5	29.5
Frequent diarrhea	2	1	2	30.5	29.5
Difficulty, frequent urination	2	1	2	30.5	29.5
Deformity or stiffness in extremities, limbs, back[b]	2	3	1	24	32

[a]Asked only in first study year.

[b]Asked only in second study year.

Source: Brunswick and Josephson, Table V-1, page 22.

Table 106. Percent of black youths with medical problems noted by a physician in a medical examination by type of problem and sex: Central Harlem, New York City, 1968-1970.

	Black Youth 12-15 years			Rank order	
	All (421)	Boys (226)	Girls (195)	Boys (226)	Girls (195)
Respiratory tract disorders	22%	20%	24%	2	1
Upper respiratory	17%	16%	17%		
Lung and bronchial	5	4	6		
Vision and eye problems	21	21	21	1	2
Heart and blood pressure abnormalities	17	17	16	3	3
Heart	13	14	11		
Blood pressure	4	3	5		
Skin and complexion problems	10	7	14	4.5	4
Nervous and emotional problems	8	6	11	6.5	5
Nutritional problems	7	7	8	4.5	6.5
Neuromuscular and musculo-skeletal problems	7	6	8	6.5	6.5
Blood disorders	4	3	6	9	8.5
Urinary problems	4	2	6	12.5	8.5
Speech problems	3	2	3	12.5	12
Mental retardation	2	2	3	12.5	12
Other growth problems (skeletal)	2	3	1	9	16
Menstrual disorders and pregnancy	2	-	4	-	10
Other genital and reproductive tract disorders	2	2	1	12.5	16
Accidents or injuries	2	3	1	9	18
Breast conditions	2	*	3	18	12
Hearing difficulties	1	1	2	15.5	14
Endocrine and metabolic disorders	1	*	1	18	16
Hernia	0.5	1	-	15.5	--
Abdominal tenderness and vague signs	*	*	-	18	--

*Less than half of one per cent.

Source: Brunswick and Josephson, Table V-2, page 23.

Table 107. Percent of black youths referred for medical care by type of condition and sex: Central Harlem, New York City, 1968-1970.

Number of physician referrals	All (419)	Black youth 12-15		Black youth 16-17	
		Boys (225)	Girls (194)	Boys (30)	Girls (45)
Three or more	6%	6%	7%	7%	13%
Two or more	20	18	22	30	42
One or more	49	45	54	63	69

Source: Brunswick and Josephson, Table X-2, page 39.

Table 108. Physician Consultation for Frequently Reported Health Problems: Central Harlem, New York City, 1968-1970.

Condition	Black Youth 12-15 Years					
	All 12-15		Boys		Girls	
	# with condition	% saw doctor for condition	# with condition	% saw doctor for condition	# with condition	% saw doctor for condition
Asthma, wheezing	48	81%	26	88%	22	73%
Hayfever or other allergy	46	57	23	61	23	52
Long-lasting cough	51	47	29	45	22	50
Skin problem	71	46	17	53	54	44
Repeated sore throats	66	44	26	42	40	45
Frequent colds	101	42	44	43	57	40
Trouble hearing	36	42	12	42	24	42
Repeated sinus trouble	42	40	18	44	24	38
Shortness of breath	37	38	15	40	22	36
Dizziness, fainting	33	36	14	57	19	21
Chest pains	59	34	26	35	33	33
Repeated nosebleeds	53	34	35	29	18	44
Repeated headaches	94	28	51	27	43	28
Stomach pains	85	28	35	26	50	30
Vomiting	52	27	19	5	33	39
Backaches	34	21	11	36	23	13
Speech problems	68	15	36	22	32	6
Shaking or trembling	40	15	16	6	24	21

Source: Brunswick and Josephson, Table VIII-2, page 33.

Health Examination Survey Regional Boundaries:

Northeastern includes: Connecticut, Maine, Massachusettes, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

Midwestern includes: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin

Southern includes: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia

Western includes: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming

U.S. Bureau of the Census Regional Boundaries

Northeast includes: Connecticut, Maine, Massachusettes, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

North Central includes: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

South includes: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

West includes: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Source: Vital and Health Statistics, Series 2-No. 43

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